

ARMED FORCES

ARMY • NAVY
AIR FORCE COAST GUARD
MARINES

MANAGEMENT



Feature

*Navy-Industry Production
Analysis Teamwork Promotes
National Defense
By Admiral Royer*

Departments

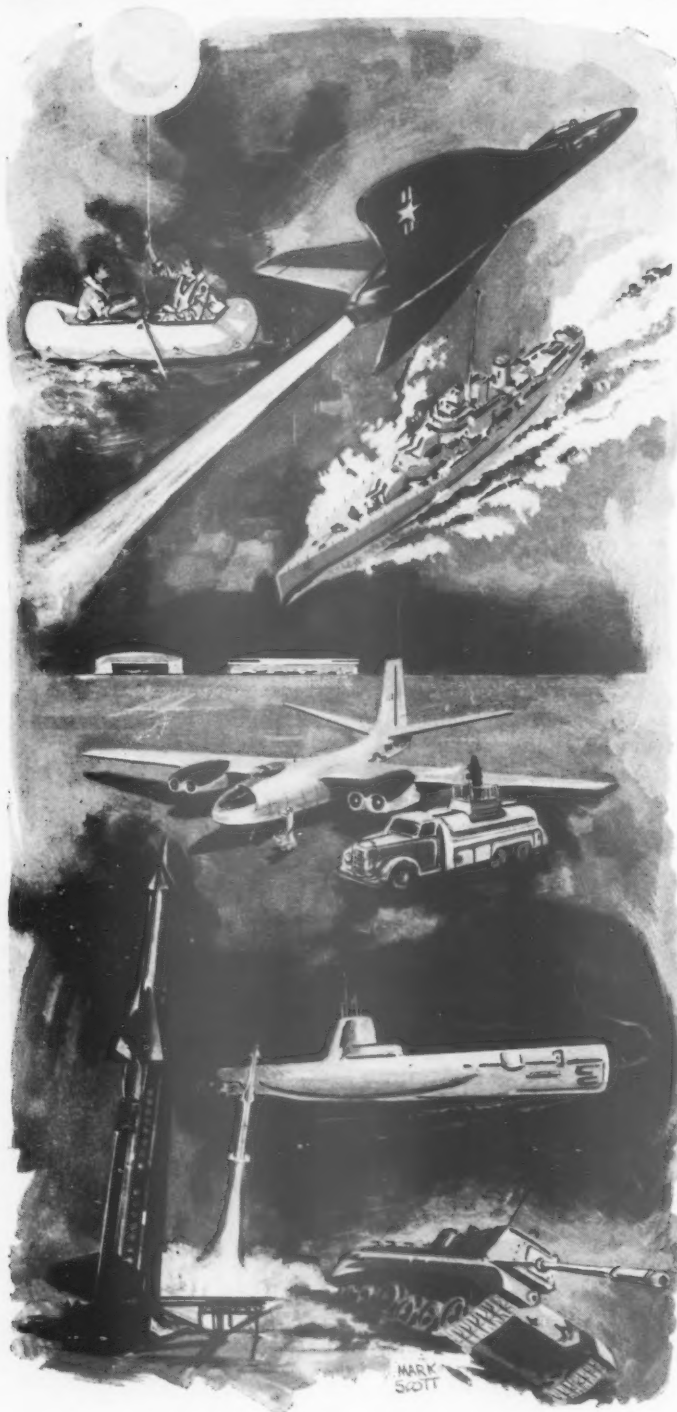
- Conservation through Suggestions
- Washington Management
- What Management Means to Me
- Service Schools
- News Briefs from the Services
- Book Reviews
- Letters to the Editor
- News and Activities of Armed Forces Management Association
- Cost-Cutting Products

On The Cover

This month on the cover we are proud to introduce Vice-Admiral M. L. Royer, USN, Chief of Naval Material. A native Californian, the Admiral with 38 years service in the Navy, and holder of many decorations, is particularly well-qualified for his assignment. With far-flung duty stations ashore and at sea, a steady and competent hand holds the helm of this important office in the Department of Navy.

Vol. 2, No. 2 November, 1955
Thirty-Five Cents

LITHIUM... Key Chemical in the Future of Defense



Lithium is nothing new. The element was discovered nearly 140 years ago, but lay dormant. As late as World War II, only two significant applications utilizing Lithium existed; both were military: Lithium Hydride as a hydrogen carrier in air-sea rescue kits; Lithium Hydroxide for multi-purpose greases.

Today, Lithium serves America's defenses on the ground, in the air, and over and under the sea. You will find Lithium used in low temperature dry cell batteries, in the deicing of parked aircraft, in the air conditioning of naval vessels, in low temperature, all-purpose greases to mention but a few.

The future of Lithium in war, or in defense of peace, is infinite—no one can gauge it. Propellants, new high temperature alloys, cermets, chemical processes—all hold promise of great developments to come. You are invited to explore this treasure house of the present—and the future—with us.

...trends ahead in industrial applications for Lithium

**LCA LITHIUM CORPORATION
OF AMERICA, INC.**
2590 RAND TOWER
MINNEAPOLIS 2, MINN.

MINES: Keystone, Custer, Hill City, South Dakota • Bessemer City, North Carolina • Cat Lake, Manitoba • Amos Area, Quebec • **BRANCH SALES OFFICES:** New York • Pittsburgh • Chicago • **CHEMICAL PLANTS:** St. Louis Park, Minnesota • Bessemer City, North Carolina • **RESEARCH LABORATORY:** St. Louis Park, Minnesota

For more facts request No. 33 on reply card



A Better Buy With Local Supply —Genuine **CLARK** Parts

Your local Clark dealer provides service facilities that have been developed for your needs. You expect the best from your Clark trucks and your Clark dealer is there to see that you get it. You get a complete service package at your local Clark dealer.

LARGEST SUPPLY—Your local Clark dealer's parts inventory is based on machine population. You get mobile service for emergencies . . . for preventative maintenance at your plant.

QUALITY PARTS—Your source for Genuine Clark parts. Designed specifically for your equipment . . . engineered to outlast, outperform any substitutes.



ONE SOURCE—for quality rebuilding, maintenance, parts, and mobile service. Complete, modern facilities offer the best in service . . . at lowest cost.

FACTORY TRAINED MECHANICS—use specially designed tools and test equipment . . . know your equipment best.

**CLARK
EQUIPMENT**

Industrial Truck Division
**CLARK EQUIPMENT
COMPANY**
Battle Creek 197,
Michigan

A BETTER BUY WITH LOCAL SUPPLY—GENUINE CLARK PARTS

For more facts request No. 31 on reply card



HOW TO CALM EMERGENCIES!



USAF HERCULES



The early presence of U.S. troops in a trouble zone has often prevented disorders and averted actual combat. The important thing is *getting them there in a hurry* to meet any emergency.

The new C-130 Hercules is an excellent airplane for this job. This combat cargo transport carries 92 fully-equipped troops at high speed over long routes in air-conditioned, pressurized cabins which minimize in-flight fatigue.

The Hercules was designed for urgent action. Its unique tail ramp permits troops to run aboard. With its four Allison T56 turboprop engines it takes off in 12 seconds, uses improvised runways for landing troops closer to action.

The Hercules is in quantity production today for the USAF as a paratroop carrier, cargo carrier, troop carrier and airborne ambulance. It's another product of Government Aircraft Plant No. 6, in Marietta, Georgia, America's first turboprop production line for transports.

LOCKHEED

AIRCRAFT CORPORATION

Georgia Division, Marietta, Georgia



ARMED FORCES MANAGEMENT

Armed

C. W.
M. H.
Asso
W. W.
Man
M. D.
I. M. I
Man
D. D. C
Book
L. A. T
and

Wester

Whale
6513 H
Los An
HOLLY
Whale
55 Ne
San Fr
SUTTER

Midwe

Dwight
100 N
Chicag
Centra

Eastern

Westo
6 East
New Y
Murray

Canada

McGo
10 Ter
Toronto
Empire

NOVEN



Designed for

your
reading!

Professional Services
Publishing Co.

Roy B. Southworth
President

Armed Forces Management

C. W. Borklund, Editor
M. H. Wicks
Associate Editor
W. Walter VanStone,
Managing Editor
M. D. Forsyth, Production
I. M. Hyatt, Advertising
Manager
D. D. Corrigan
Book Reviews
L. A. Thomas, Librarian
and Research

Advertising Representatives

Western—

Whaley Simpson Company
6513 Hollywood Blvd.
Los Angeles 28, California
HOLLYWOOD 3-7157
Whaley Simpson Company
55 New Montgomery Street
San Francisco 4, California
SUtter 1-6072

Midwestern—

Dwight Early and Sons
100 North LaSalle Street
Chicago 2, Illinois
Central 6-2184

Eastern—

Weston and Weston
6 East 39th Street
New York City, New York
Murrayhill 5-9450

Canadian—

McGoey Brothers
10 Terauley Street
Toronto 1, Canada
Empire 6-7626

NOVEMBER, 1955

ARMED FORCES

NAVY
AIR FORCE

COAST GUARD
MARINES

MANAGEMENT

Volume 2

NOVEMBER, 1955

Number 2

Features

	Page
Navy-Industry Production Analysis Teamwork Promotes National Defense.....	5
by VAdmiral M. L. Royar, SC, USN	
Presentation on the Periodic Review of Reports (Conclusion).....	13
by Robert S. Cochran	
Engineered Time Standards and Navy Supply Operations.....	15
by Tom Kouzes	
Philosophers, Principles and Naval Organization (First of two parts).....	17
by Rear Admiral John D. Hayes	
Mobilization Readiness and Peacetime Economy, our supply responsibility.....	22
by Commander M. J. Barkdull Kahao	
The Best of All Possible Armies.....	24
by Avery E. Kolb	

Departments

What Management Means to Me.....	11
News and Activities Armed Forces Management Assn.....	14
Book Reviews.....	26
News Briefs from the Services.....	28
Washington Management.....	29
Letters to the Editor.....	31
Service Schools.....	32
Conservation Through Suggestions.....	38
Products Designed to Deflate Production Costs.....	40
Index to Advertisers.....	48

ARMED FORCES MANAGEMENT is published monthly by the Professional Services Publishing Company, Roy B. Southworth, President. Publication office 404 N. Wesley Ave., Mount Morris, Ill. Editorial and Business Office, 208 South Second Street, Rockford, Illinois. Accepted as controlled circulation publication at Mount Morris, Illinois. Subscription Rate: \$3.50 annually. Copyright 1955 by the Professional Services Publishing Company. Title registered, U.S. Patent Office. Six weeks notice before next publication date required for change of address.



A PLOT OF AIR HISTORY

The U. S. Navy tracks aircraft on a transparent board as radar reports their positions. Plot the most famous Navy and Marine fighter planes as reported by history, and Grumman aircraft fill the board.

GRUMMAN AIRCRAFT ENGINEERING CORPORATION
BETHPAGE • LONG ISLAND • NEW YORK

DESIGNERS AND BUILDERS ALSO OF THE ALBATROSS TRIPHIBIAN, S2F SUB-KILLER, METAL BOATS, AND AEROBILT TRUCK BODIES

MR. M
of the
writing
remark

"Th
We
our
adop
Ana
Nav
initi

Mr.
of Bal
which
contra
pletes
War I
Rea
as Lin

War I
pione
Produ
sched

Mr.
Engin
with
While
Cdr. F
bottlen
quenc
center

Foll
to rein
critica
Joseph
memb
Naval
studie
Army's
Pampl
of one
Force
Sinc
more

NOVEN

By VAdm M. L. Royar, SC, USN

Chief of Naval Material

MR. MOREHEAD Patterson, Chairman and President of the American Machine and Foundry Company, writing in the May 1955 Armed Forces Management remarked:

"Thirdly, we have no false pride of 'Authorship.' We try to learn from our customers no less than our competitors. Only recently, we began the adoption of the Fouch system of Production Analysis developed by the Navy. It wasn't the Navy's idea that we do this—we did it on our own initiative."

Mr. Patterson's acknowledgment of the Navy Line of Balance technique is indicative of the responses which have been received from many large and small contractors. This catch by American industry completes the triple pass play that began with World War II.

Real "Author" of Production Analysis (also known as Line of Balance) was industry at the start of World



Navy-Industry Production Analysis Teamwork Promotes National Defense

War II. The Goodyear Tire and Rubber Company pioneered in developing the technique. They found Production Analysis as the answer to many industrial scheduling problems.

Technique Grows

Mr. George E. Fouch, now General Manager, Jet Engine Division, General Electric Company, had been with Goodyear before entering the Naval Service. While on duty with the Navy Bureau of Aeronautics, Cdr. Fouch, USNR, used Production Analysis to break bottlenecks in vital aircraft production. As a consequence, the flow of warplanes to the fleet and training centers was expedited.

Following the attack in Korea, Mr. Fouch was asked to reintroduce the Line of Balance technique among critical items in the Department of Defense. Mr. Joseph H. Reed of Wellings-Reed Associates—then a member of the Production Division of the Office of Naval Material—assisted Mr. Fouch in many of these studies and extended the program. Production of the Army's M-1 tank (see Department of the Army Pamphlet No. 20-350, March 1952) was the subject of one study. Principal aircraft programs for the Air Force were the subjects of others.

Since Korea, the Navy has installed and monitored more than 100 Production Analysis studies primarily

on high priority items in the fields of guided missiles, aircraft, ship components and electronics. In the Office of Naval Material's role of coordinating Navy production, procurement, and supply programs with the technical bureaus the Production Analysis technique has played an important part.

Survey Results

These surveys have resulted in quick delivery improvements. In many cases the items were of high priority. Production Analysis has provided an effective device for the Navy and the contractor to review performance and to consider current or anticipated problems affecting future delivery schedules. One large manufacturer producing an important end item for the Navy has stated that the Line of Balance is essential for his top executive conferences on production. Several small contractors have stated that Production Analysis has been extremely useful in providing a performance gauge of their operations.

An example of the use of Production Analysis was the production of ship components. The monitoring of several crucial ship components used in the construction of aircraft carriers has resulted in considerable savings to both the Navy and individual contractor.

To extend the use of the technique even further, the Navy has undertaken a training program during

the past two years for Naval material inspecting officers and key executives in industry. Training aids and a curriculum have been developed.

Results Justify Training

The training program is more than justified. World War II experience exposed the high costs of telescoping time, and the inadequacies of systems based on an economy of plenty. For the future, we can reasonably expect to have no reservoir of trained engineers such as we had to start World War II. There is a continuing need to indoctrinate both industry and Navy technicians to a proven system that will work during an emergency.

Production Analysis Defined

Production Analysis is a technique for gathering, selecting, interpreting and presenting the essential factors involved in the production of an end item or component. Production Analysis is also a series of pictures that present the principal elements in the production process from raw materials to completion of the end product against the background of time. As in the case of the newspaper headline, this technique provides its audience with instant recognition of the important production facts.

Production Analysis is based upon the principle of exception which examines the production operation only in terms of its limiting parts or materials. It differs, therefore, from the production control system, which examines all the parts included in the end item or component. Top management is given the facts and the problem areas. With the exercise of good judgment, action may be taken to avoid potential bottlenecks and breakdowns.

Survey Installed

The Navy follows a general operational plan during the installation of a Production Analysis System. On the surface, Production Analysis appears very simple—deceptively so. Key to the success of any installation is the energy devoted to the project. Source of all information is the plant. A team composed of Naval personnel work

with the key staff men to collect the facts. Winnowing out the exceptions, the building of a good "Bill of Material," and constructing a profile of the assembly line are required. The knack of finding the critical limiting factors be they equipment, components, or skilled operators, is the key to success.

Before the installation begins, top management is briefed on why the study is being made, what facts are needed, and what results may be expected from the study.

The group is then ready to initiate the survey. First, information is gathered on the delivery objective. The commitments to deliver material as found in contracts are extracted. Actual deliveries to date are compared with the commitments. Thus, failures to meet the contract obligations are exposed.

Next is the Production Plan. The bill of material—the blueprint of all parts—is examined. Assembly lines are checked. Statements are double checked for accuracy, and sources of information are evaluated. From this information an assembly tree is developed. Stock status information is obtained and checked on all parts shown on the assembly tree.

Following the development and posting of the facts to graphic charts, management and production officers are briefed on the results and conclusions to be drawn.

At this point, the plant staff takes command. By periodic maintenance and regraphing for changes in such factors as the bill of material, assembly lines, stock levels, and contract delivery schedules, the staff provides analyses of progress with indicated corrective actions.

Production analysts work fast. The average initial installation takes little more than a week. Under intensive scheduling, analysts work long hours to meet deadlines. There is nothing as old as yesterday's newspaper—the same holds true for statistics. Production analysts see the perishable nature of any information. Consequently, they try to find the critical spots as quickly as possible.

Approach Impartial

Analysts emphasize that they never know when they start, what the results will be, nor are they anxious to prove any pre-conceived

point. Surveyors start from scratch and are entirely objective in their approach.

An incomplete or non-existent bill of material or inadequate process sheets only slows down the analyst. Standardized procedures save the analyst from some errors, but there are still many problems involved in a survey that only with experience can the analyst hope to solve.

One difficulty occurs where the processing time is not established, or fluctuates. Mr. Fouch discusses this:

"It may occur to the discerning reader that if the process times are not yet firmly established in terms of working days prior to shipment, it is difficult to draw a line of balance. This is quickly conceded. It is maintained however, if the correct relative sequence of requirements in operations is maintained, that the slope of the status bars will give just as good an indication of relative imbalance as though it were possible to draw a more precise line of balance."*

Plant Management may raise points of issue such as, "We don't know how long it takes us to do a given task, so what is the benefit of planning and charting if we are just making a guess?" The analyst may reply, "You have to develop a plan in order to see the impact of the various forces on production. You have to start sometime, some place, to plan your work. We will establish a basis upon which we can measure actual progress against our estimated target."

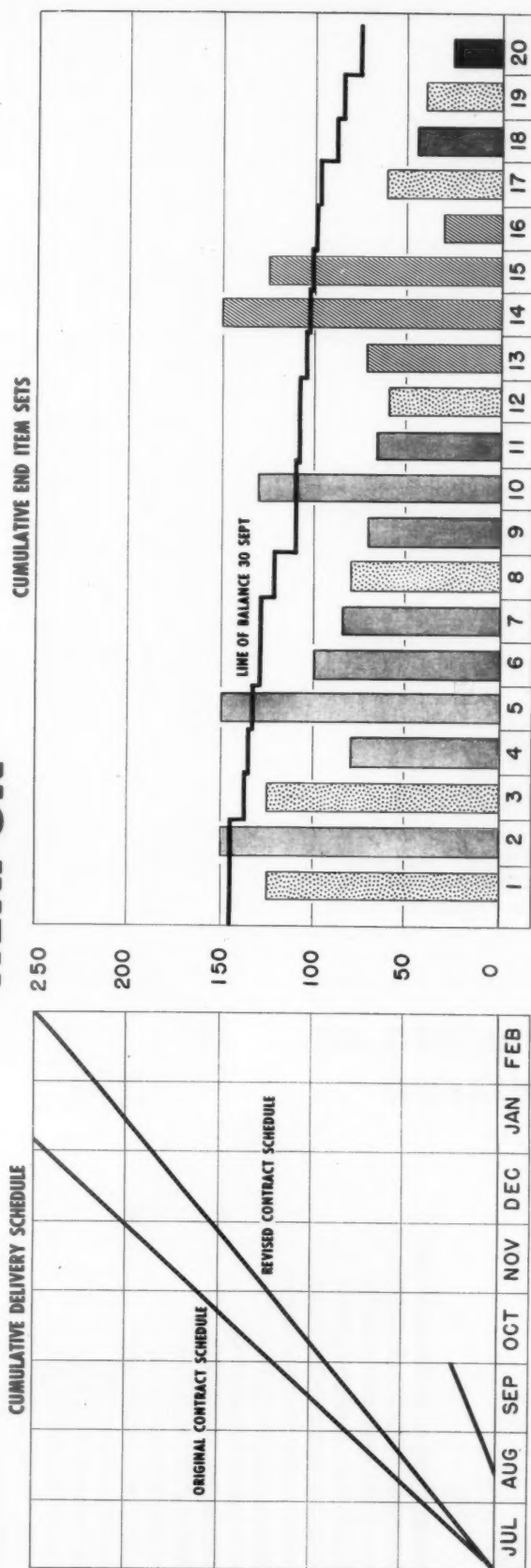
Again the plant manager may state, "You don't go far enough back on purchase records and other external factors." To this, the analyst may counter, "You need to get a picture of raw material, parts, and sub-assemblies now in the plant or shipped. You can take your Production Analysis and let the purchase people use it in whatever manner they wish. You can kill the value of Production Analysis by making it too complex."

*Fouch, George E: "How to Coordinate Subcontracting to Meet Production Schedules," AMERICAN MACHINIST Special Report No. 354

FEDERAL MFG. CO. WEAPON

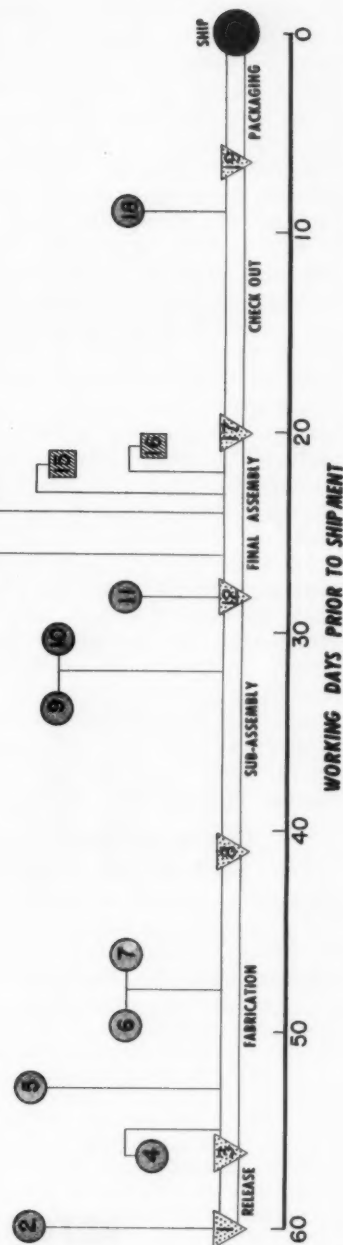
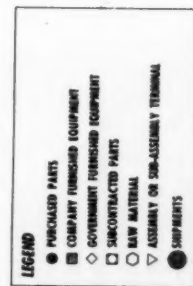
CONTRACT NO. N1224
UNITS IN CONTRACT 250
CONTRACT DATE JAN 10 1954

FIGURE 1



BAR KEYED BY NUMBERS TO FLOW CHART BELOW

SCHEDULED FLOW OF MATERIALS, COMPONENTS & PARTS



Results Stressed

Production Analysis pinpoints the responsibility of the Navy and the contractor with regard to the delivery schedule. In the case of the Navy, Production Analysis sets forth the responsibility with respect to such matters as Government Furnished Equipment, inspection services, design changes, and modifications. For the contractor, Production Analysis specifies the steps that must be taken in order to coordinate engineering, production and purchasing activities as required by the contract. It eliminates conflicting opinions of actual or potential delivery failures, and unsupported optimism with respect to the solution of their causes. This is done by restricting the evaluation of production performance to facts confirmed by on-site confirmation.

From the Navy's standpoint the technique enables the Navy to make the best allocations and re-distributions of Government Furnished Equipment to contractors producing the same end item or component. In mobilization planning, Production Analysis divulges critical items for which mass production lines would be mandatory.

Charts Prepared

The hallmark of Production Analysis is simplicity and clarity of the presentation. It reduces a mass of survey facts and figures to a required minimum. Each Produc-

tion Analysis chart is a combination of inter-related line, flow, and bar charts showing the production objective, plan and progress. A Line of Balance added to the bar chart establishes the quantity levels required as of the survey date to meet the delivery schedule.

As used in the plan of production, colors and symbols represent sources of supply and terminal points in the assembly line. For example, a purchased part is symbolized by a blue circle, an assembly or sub-assembly terminal point by a red inverted triangle.

The number of charts prepared depends upon the number of parts in the end item. Only one chart is needed if the end item is composed of less than 50 parts. When the number exceeds 50, three separate charts — "Major Components," "Contractor Furnished Parts," and "Purchased Parts," are needed to cover each major production sector.

Figure 1 represents a "Major Components" chart that has been prepared to illustrate the posting and diagramming of Production Analysis information.

Delivery Objective

Before progress can be evaluated, the *production objective* must first be established. The line chart located in the upper left sector of Figure 1 shows planned and actual delivery performance throughout the contract period. For charting

purposes, quantities are plotted on the vertical lines, time on the horizontal. As shown by Figure 1, three delivery schedules have been posted—the original, revised and actual. The first called for full contract performance between July and early January. The revised schedule extended the delivery period by approximately two months until the end of February. By the date of the survey, however, actual deliveries amounted to only 25 units. This total was considerably below the 85 called for under the revised schedule.

Plan of Production

The Plan sketches the flow of raw materials, parts, and components as they combine to form sub-assemblies, and proceeds through final assembly to shipment. Each step is posted in terms of working days before shipment.

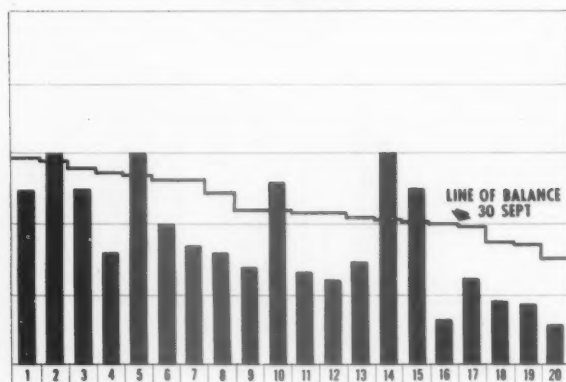
The tie-in of the major components, least available purchased parts, and company furnished parts to the sub-assemblies and the major assembly is shown on their respective charts.

Figure 1 illustrates the manufacturing cycle beginning with the release of the first major component to the production line, labelled Symbol No. 2. This action took place at a point of 60 days before shipment. Between release and shipment 13 major components (Continued on page 10)

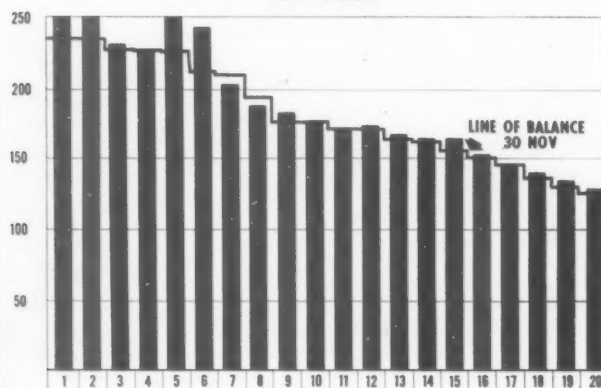
FEDERAL MFG. CO. WEAPON

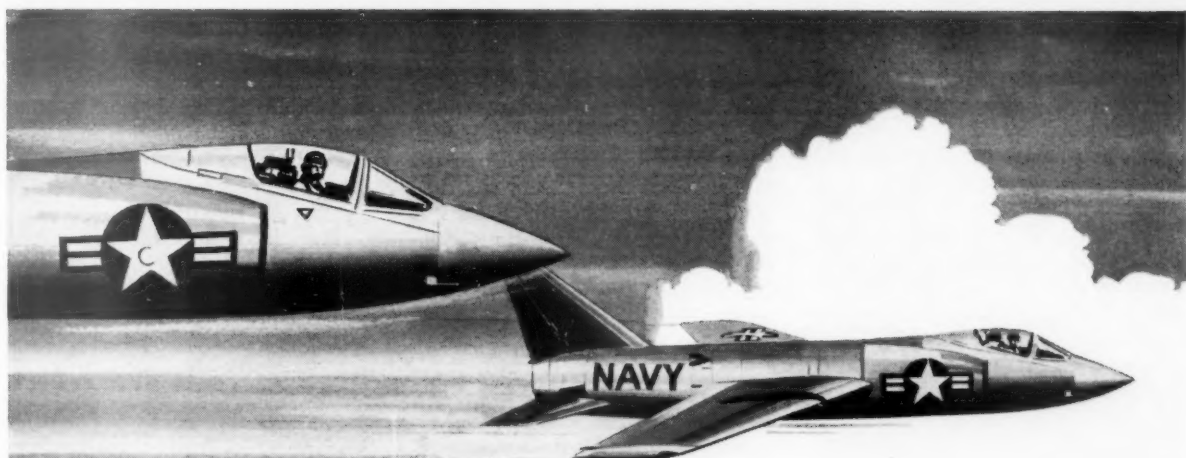
FIGURE 2

BEFORE



AFTER

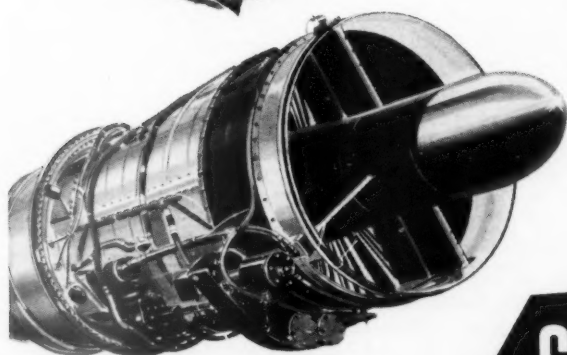




The GRUMMAN F11F-1 "TIGER"

— New Supersonic U. S. Navy Fighter —
is powered with the

J65 JET



One of the few combat airplanes in the world capable of flying faster than sound in level flight, the new Grumman "Tiger" is a formidable addition to the U.S. Navy's carrier-based striking force.

The tremendous thrust required for supersonic flight is developed by a Curtiss-Wright J65 JET with afterburner, a combination that greatly multiplies the engine's normal output. The Grumman F11F-1

brings to EIGHT the announced list of J65 JET-powered high-performance fighters and bombers for the U.S. Air Force and the U.S. Navy.

In service operation, even without afterburner, the J65 JET DEVELOPS HIGHER POWER than its announced rating of 7220 lbs. thrust with 6% LESS FUEL than specification requirements. This outstanding performance today is combined with the demonstrated capacity of the J65 JET for power growth to meet the requirements of tomorrow's advanced aircraft.



WRIGHT AERONAUTICAL DIVISION

CURTISS-WRIGHT

CORPORATION • WOOD-RIDGE, N. J.

YOUNG MEN!

Build a career in
the U.S. Navy

World's Finest Aircraft Engines

Production Analysis

(Continued from page 8)

combined to form the completed end item.

Starting at 56 working days before shipment, Symbol No. 4, a purchased component, entered fabrication. At 42 days before shipment, sub-assembly began as indicated by symbol No. 8. The beginning of final assembly is represented by symbol No. 12. Completion of this stage of manufacture is indicated by symbol No. 17 located 20 days before shipment. Checkout and the packaging process occurred during the last 20 days.

Production Progress

The next stage is the *measurement of progress* of the production plan. This is accomplished by a bar chart located in the upper right half of the chart.

The quantity scale on the bar chart is the same as that used to plot the delivery objective. They represent inventory levels of either raw material, parts or major components which have been used in the assembly line as well as inventory on hand. In the case of assembly points, the quantities represent the number of end item sets which have passed each control point.

Since the numbers of the bars correspond with the numbered entries on the flow chart, performance at any point along the line can be quickly determined. To illustrate, bar No. 12 of Figure 1 shows that 60 units had started down the final assembly line. Bar No. 20 indicates the completion and shipment of 25 end items. This total of 25 also corresponds to the number of actual deliveries plotted on the line chart.

Line of Balance Located

The Line of Balance represents the quantities of end item sets required under the current production plan to meet the cumulative delivery schedule on the survey date. By adding the required quantity of deliveries on the survey date to the quantity required for a component's production lead time, the total required is found. A study of the Line of Balance will show that where the Line of Balance is

above the top of a bar, that a deficiency exists—if the bar extends above the staircase, a surplus may exist.

For bars below the Line of Balance, corrective action is needed in order that the delivery schedule is met. In the case of Figure 1, the contractor is in serious difficulty since all of the bars except five are below the Line of Balance. In the case of bar No. 14, excess inventory exists.

Follow Up

Once the Production Analysis technique is installed, the contractor has a picture of his production status on the *date of the survey* in relation to delivery obligations. Further value of Production Analysis occurs during the updating when Management secures a succession of pictures. Only by continuing analysis can Management condition its responses to the dynamic aspects of the assembly line. Right decisions can be reached to produce the finished goods as scheduled with the best combination of elements—money, manpower, and materials.

When presented with the production picture of 30 September, Contractor "A" immediately took action to improve the situation. From the information supplied by Production Analysis, the Purchasing Department expedited the supply of those limiting components secured from outside sources. In the case of company-made components, the Production Department directed attention to increase the supply. Consideration was given to production lead time factors and inventory levels of raw material and parts. Design changes were introduced by the Engineering Department on a schedule to minimize their effects on the production flow.

Follow Up Results

A striking example of improvement is shown by Figure 2. After two months, actual deliveries were meeting the schedule. Contrast this with the initial study of 30 September when the company was short 60 units.

Figure 2 also shows a more balanced picture. On 30 November only two of the bars were slightly below the Line of Balance com-

pared with 15 bars that were seriously deficient at the start. Management noted the two deficient areas and immediately began to take action to avoid the predicted delivery delays.

Conclusion

The flexibility of Production Analysis makes it useful during pre-production stages. By using the principles of the technique in the scheduling of engineering and manufacturing processes prior to production, considerable improvements can be made in delivery performance. Small companies concerned with securing better inventory control may find Production Analysis useful in producing savings in warehousing, stores control, and in reducing capital requirements. Dollar savings from improved inventory control may more than pay for the installation and maintenance of the technique.

Illustrative of the benefits to large contractors from Production Analysis is seen from the General Electric Company's experience with Jet Engine Programs. The Line of Balance technique was applied to some 3,000 subcontractors. By coordinating the flow of production from subcontractors, "GE" was able to reduce inventory levels, to encourage efficiencies, and to avoid delays caused by subcontractor production bottlenecks and breakdowns.

When Mr. Patterson acknowledged the part that the Navy had played in the adoption of Production Analysis to the American Machine and Foundry Company, he completed the triple pass play from industry to Navy and back to industry. The Navy can but acknowledge the indebtedness to industry and wish only that the Navy-Industry teamwork be continued and expanded.

A long list of "firsts" can be attributed to the Mare Island Naval Shipyard. Among these, Mare Island had the first naval hospital, the first Marine Barracks, the first ammunition depot, and the first naval cemetery on the Pacific Coast.

What Management Means to Me—

This Month:

by Major General John G. Van Houten

Commanding General
8th Infantry Division and Fort Carson

BEFORE getting involved in what I might consider my own concept of management, let me say that I am entirely in agreement with the statement, made by Daniel L. Kurshan in the July issue of *Armed Forces Management*, that "the smaller the unit, the more likelihood that both administration and management engineering are accomplished by the same head and the same set of hands."

I think this is especially true in an organization such as an infantry division, which has no management engineer as such. If a division operates entirely separately and alone, its management engineering must be done by the same people who administer: the commanders and staff officers.

Any argument whether this is or is not a desirable situation seems to me to be entirely academic since there appears little likelihood of organizational structures being changed to include a management engineer in field type units.

Since the aims of both administration and management engineering are essentially the same—to get the job done as well as possible today and better tomorrow—this is probably not a great disadvantage. The problem in its most basic form is, I believe, how to get the most efficiency from your people.

Management engineering and administration in any organization must both begin with people. This is a truism, of course, but one nevertheless overlooked by a good many individuals who are willing to consider everything else first.

The one principle of personnel management which, when ignored or not given its proper due, seems to have been one of the most general causes of failure in organization is the principle of delegation of responsibility and authority. I consider this principle clearly the most important in creating an effective organization and in getting each man to put forth his best efforts.

The problem of delegation reaches into antiquity. When Jethro discovered that Moses was judging his people by himself, he said, "The thing that thou doest is not good."

Moses wisely accepted his father-in-law's advice to delegate some of his authority and responsibility, and "chose able men out of all Israel and made them heads over the people, rulers of thousands, rulers of hundreds, rulers of fifties, and rulers of tens. And they judged the people at all seasons: the hard causes they brought unto Moses but every small matter they judged themselves."

This is especially good advice in an organization such as an infantry division. No commander can



possibly do his own job and that of his subordinates also. The leaders represent authority and they must have all of the authority necessary to discharge their responsibilities if they are to exercise that leadership.

The problem is not solved by saying that organization provides for such delegation and, in the Army especially, sets forth each commander's authority and responsibility. This is generally true, but it by no means assures that each commander retains his prescribed authority.

There is a tendency, especially in today's Army of short term officers and enlisted men, to withdraw some responsibility and more authority from positions occupied by these short-timers. It is an insidious tendency, and in many cases extremely hard to argue against.

Even where an experienced individual is concerned, responsibility and authority are sometimes withheld until he "proves himself" in the assigned position.

There are other reasons, all equally vulnerable, for either withdrawing responsibility and authority or not assigning them in the first place. They all possess some merit, of course, but the disadvantages, which one would think would be obvious, are often overlooked. Authority and responsibility are prerequisites to successful leadership; withdrawing them deprives the individual of the very elements he needs to succeed. With success precluded, the very natural tendency is to "just get by."

I think it is apparent that we cannot "just get by" in an infantry division. A division has just one mission: to win in combat. It cannot win in combat without good leaders. And it cannot create good leaders unless each one is permitted, and required, to live up to his assigned responsibilities by having the necessary amount of authority delegated to him.

The short-time personnel and the fairly rapid turnover in today's Army do present a problem. But it is a problem which must be, and can be, solved by the career leaders. We do not have time, as industry does, to develop our leaders for specific positions by gradually increasing authority over a period of months

and sometimes a number of years.

We must decide almost immediately who shall be the leaders and who shall be led. To overcome this great disadvantage, our career leaders must train themselves to recognize potential leadership quickly. They must be able to determine which man will serve best in command of a company, or battalion, or as head of a staff agency.

This is a tremendous problem, and the need which makes a quick decision essential paradoxically urges us to hesitate until we are sure we have made the right decision. We know if we fail to decide correctly we will have done inestimable harm to our organization, and we feel frustration because we don't have more time.

The dilemma requires that we sharpen our ability to judge people quickly, to draw out of them enough information to enable us to make the decision as quickly as it must be made. And once we make the decision, we must disclose no misgivings. The ones selected must be backed with all our confidence and trust. Superior officers must hesitate to reverse decisions made by subordinate leaders except in extreme emergencies. If the superior has chosen wisely, such display of trust will

make leadership abilities spring forth like Jack's beanstalk.

Not only will the proper use of delegation of authority and responsibility breed good leaders quickly, but superiors will have created a valuable source of help in reaching decisions. A man who has responsibility and enough authority to discharge that responsibility will rarely become a "yes" man. He will let you know what he thinks, honestly and fearlessly. It is usually the man who has no responsibility who suppresses his honest opinion to tell the boss what he thinks the boss wants to hear.

The principle of delegation is no one way street: it must be respected by all concerned. We attach great importance in the Army to what we call "channels." And not without good reason. A division commander should not criticize a company commander for actions within the regimental commander's sphere of responsibility. By so doing, he robs the regimental commander of the loyalty and confidence of those working under him. And so with any organization. Channels up and down must be respected if leadership is to have any meaning.

The whole principle of delegation, and the importance I place

upon it, stems from the recognition that human personality is the one factor most important to the success of any undertaking. We are somewhat prone in today's world of things to place undue emphasis on the purely objective, and to overlook the subjective needs of the people who work with and for us. When something goes wrong we too often look for a flaw in the system rather than a flaw in our dealings with others.

I am convinced that this tendency must be completely halted and reversed before the success of any organization can be assured. Things must be put in their proper perspective, and this demands that the needs and desires of people be considered along with systems. By showing our subordinate leaders that we have confidence in them, that we trust them with all the responsibility and authority they must have, we overcome the greatest obstacle to good management and to success.

North American and Rolls-Royce Enter Assistance Agreement

A mutual technical assistant agreement has been reached by North American Aviation, Inc., of Los Angeles, and Rolls-Royce Ltd., Great Britain, it was jointly announced by the two companies recently.

Under the agreement North American will license Rolls-Royce to manufacture Rocket Propulsion Systems designed and developed by North American, and both will exchange technical information relating to engineering, development and manufacturing in these fields. The agreement covers a ten-year period.

The agreement was entered into between the two companies with the approval of the United States and British governments. Assistant Secretary of the Air Force Trevor Gardner stated that this program is in support of the Wilson-Sandys Collaboration Agreement on guided missiles, between the United Kingdom and the United States, dated June 12, 1954.

Conservation is a product of thought and work—it just doesn't happen of its own accord.



Cargo High Mark—San Francisco Port of Embarkation in early September 1955 moved its 60,000,000th measurement ton of cargo since January 1, 1942. Participating in the milestone ceremony at Oakland Army Base, the Port Cargo center, were left to right: Martin Callaghan, President, Local 10, International Longshoremen's and Warehousemen's Union; Col. Kenneth W. Gillespie, Port Director of Operations; Winston Jones, Vice President of Pacific Transport Lines; Brig. General William J. Deyo, Jr., Port Commander; Col. John Cunningham, Chief, Port Terminal Operations Division; Nils Linden, Stevedore Superintendent, West Coast Terminals; and Joseph Floyd, Piers Superintendent, Mutual Stevedoring Company.

Presentation on the Periodic Review of Reports

By Robert S. Cochran

Conclusion

THIS is a presentation on the Periodic Review of Reports. It is divided into two parts: first, a discussion of the objectives and procedures of the review and second, a summary of review accomplishments during the first year of operation—calendar year 1954.

There are five objectives of the review:

The Periodic Review procedure calls for a continuous, orderly review of reports at prescribed intervals. The procedure is designed to combine evaluations of each report by field preparing agencies, with appraisal and re-justification by the report initiating agency, to provide a sound basis for corrective action.

The review procedure of which we are here speaking is designed specifically to be applicable to the main group of Army-wide reports prescribed at Department of the Army level, that is, reports under the direct jurisdiction of PRAD, OCA. This group, numbering between 900 and 1000, includes reports initiated by DA staff agencies, DOD and other Federal agencies. The same or a similar procedure is required for review of internal reports of DA agencies and field commands.

The Periodic Review operates on a decentralized basis, under which the Army Comptroller retains responsibility for overall supervision and coordination, while individual reports control officers in DA staff agencies are given the primary responsibility for scheduling the reports to be reviewed, for analyzing the results, and for initiating corrective action.

The Periodic Review is a continuous operation with a new review cycle starting each quarter and lasting approximately nine

months. To illustrate the process during one cycle, Chart 2 shows the Time Phasing of Primary Steps for the review quarter ending 31 December 1954. The review quarter is the quarter during which field evaluation and analysis is performed. As indicated on the chart, preparation starts well in advance of the quarter and final DA action extends considerably beyond it. This chart shows the main phases of the review (Scheduling, Evaluation and Analysis & Corrective Action), the periods during which they take place, and the agencies responsible for carrying them out. The colors shown represent responsible agencies: blue, PRAD, OCA; red, initiating agencies; green, major command headquarters, and yellow, preparing agencies.

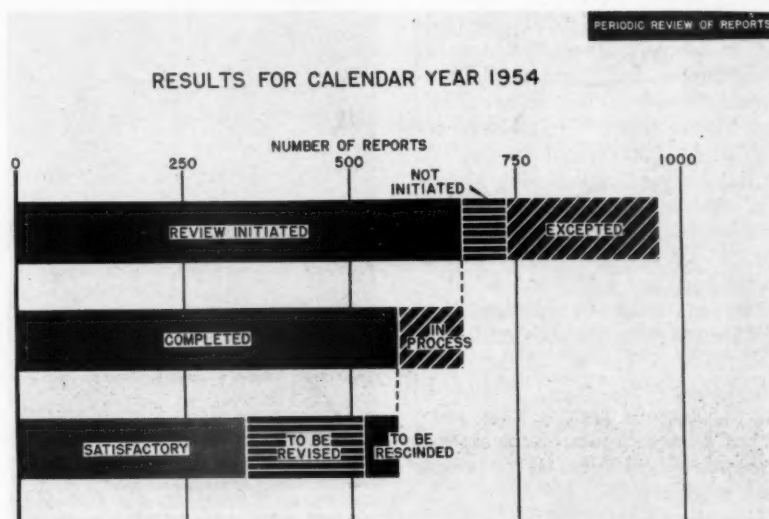
The first phase, Scheduling has three steps. In the first step, the report initiating agency, i.e., G-1, The Inspector General, Chief of Ordnance, etc., prepares schedules of the reports to be reviewed and forwards them to PRAD, which in

the second step reviews and approves the schedules and distributes them to the major commands. In Step 3, the schedules received from DA are used by the major commands to prepare and forward evaluation questionnaires to report-preparing agencies. Review in the field begins with Step 4, in which report preparing agencies, i.e., installations, or headquarters staff section, complete the questionnaires and return them to Reports Control Officer of the major command headquarters.

The final phase of the cycle, Analysis and Corrective Action, which begins with Step 5, overlaps (Continued on page 35)



Mr. Robert S. Cochran, graduated from the University of Florida in 1933 with a B.S. in Business Administration. Since that time he has been employed as a statistician in various government agencies. At present Mr. Cochran is Chief of the Review Section, Reports Control Branch, Program Review and Analysis Division, Comptroller of the Army.





ARMED FORCES MANAGEMENT ASSOCIATION

NEWS and ACTIVITIES

Headquarters. Weldon T. Ellis, Jr. has announced that Major General Lawrence R. Dewey will act as Chairman of the AFMA while he is serving with the Congressional Committee studying manpower utilization in the Federal Government.

CHAPTER NEWS

Aberdeen Proving Ground Chapter. In a report to the members Dr. Walter G. Held, President, recorded significant forward steps made by the National Association, as announced at the AFMA Annual Conference, and presented plans for local activities during the coming months. The Chapter plans include regular quarterly dinner meetings as of 6 October when Mr. Walter Perkins, V. P. and General Manager of Koppers Company, is scheduled to deliver an address on "Management in Industry." A series of special meetings are scheduled during September through December on "Uses of High Speed Electronic Computers for Management Purposes," "Uuivac File Computer," "Reorganization of Development and Proof Services," "Program Planning and Control in Research and Development Activities," "Decentralized Organization of the Ordnance Corps," "Incentive Awards Program in the Federal Government," "Problems of Military-Civilian Management," "Job Engineering," and "Management Approaches at Bainbridge Naval Training Center." A local awards program has been established which provides for the presentation of an award to the member who has made the most outstanding implementation of Management Methods and Procedures, and one to the member who has written the most outstanding professional paper on the subject of Armed Forces Management. A monthly local Newsletter has also been established.

Hawaii Chapter. The official

charter was presented at a dinner meeting on 18 August. Major G. T. Houghland announced the next meeting to be 15 September.

Sourdough Chapter closed the season with a social dinner-dance on 26 August. The next meeting was scheduled for 22 September.

National Capital Chapter is opening its fall schedule with a dinner meeting 6 October. Alan B. Hargreaves, Senior Staff Engineer of Anderson, Nichols and Company (a consultant organization) will speak on "Production Planning and Control; a Cost Factor." The Personnel Utilization Division has scheduled for September 21, an Army panel discussion on "Do our Personnel Programs Satisfy the Field Commander." In November Army, Navy and Air Force representatives are scheduled to discuss the "Use of Electrical Data Processing Machine in Personnel Administration and Manpower Control." The Management and Industrial Engineering Division has sched-

uled for their 15 September meeting a discussion on "What Functions Should a Management Shop Perform?" by Army, Navy and Air Force representatives. The Programming Division has also scheduled a 21 September meeting with a panel composed of Navy representative Captain E. E. Grimm, Asst. Director of General Planning Group, Programs and Budget, CNO; for the Army, Mr. S. Ruddel, Asst. Comptroller for Plans and Review; and for the Air Force, Mr. Robert Huley, Office of Assistant for Programming DSC/O, each explaining the programming methods of his agency. A question and discussion period will follow.

Baltimore Chapter. The first field chapter of the Association inaugurated a vigorous program for the year on 15 September with a dinner meeting. Lt. Gen. Laurin L. Williams, Comptroller of the Army, addressed the Chapter on the subject "How Management Looks to the Army Comptroller." He will be introduced by Lt. Gen. Floyd L. Parks, Commanding General of the Second Army. Brig. Gen. Hugh P. Harris, Chief of Staff of the Second Army and Colonel J. B. Lindsev, Post Commander of Fort Meade, Maryland have accepted invitations to be guests at the dinner meeting. Election returns were to be announced at the meeting and an all out effort for this first meeting of the new year was designed to as-



(l. to r.) Mr. Hyneckeal, 2nd Army Dep. Compt.; Lt. Gen. Williams, Compt. of Army; Com. Kniskern, Commander Coast Guard Yards; Col. E. A. Cummings, 2nd Army Compt. and Brig. Gen. Harris, 2nd Army Chief of Staff chatting informally before dinner at first general meeting, Fall session of the Baltimore chapter.

sure the success of the coming year for the Chapter.

The Board of Directors of the Baltimore Chapter elected Lt. Col. Robert M. Elrick, Air Research and Development Command, as Chairman of the Chapter for 1955-56.

The Bay Area chapter held its first monthly meeting of the 1955-56 season 20 September in Room 307, Stillwell Hall.

Key speaker of the evening was Mr. Allan W. Voorsanger, who discussed Electronic Data Processing — A Management Tool. Accompanying the talk, a film on the use of electronic computers by the Armed Forces was shown.

Organized less than a year ago, the Bay Area AFMA seeks to promote the development of management practices as applied to Department of Defense Operations. Since then, an initial membership of 22 from Sixth Army Headquarters has been engaged in obtaining military and civilian members from all Army, Navy and Air Force Agencies in San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Marin and Solano counties.

Fort Benning, Ga. William H. Glenn, Nehi Corp. president, addressed The Infantry Center Chapter of the Armed Forces Management Association last month at Fort Benning.

Glenn, a leading Columbus (Ga.) manufacturer and businessman, spoke on the organizational structure of a modern corporation before approximately 40 members and guests attending the association's fifth meeting.

According to Col. Harrison M. Markley of Clarksburg, W.Va., chapter president and Infantry Center comptroller, the newly formed group invites all military and civilian personnel interested in management problems and activities to attend its meetings. The chapter meets the second Tuesday of each month in the Main Officers' Mess.

An Army First

The first attempt to organize a meteorological observing and forecasting service on a national scale in America was made by the Army Signal Corps in 1870. By 1878 the corps had 224 observation stations in operation.

Engineered Time Standards and Navy Supply Operations

by Mr. Tom Kouzes

GETTING the most for every dollar spent is indisputably the paramount desire of both private industry and government. Though the motives may differ—"profit" for industry, and "effectiveness, efficiency and economy" for government—both have been striving by various means to reduce the cost of their operations.



Private industry has become increasingly concerned during the past decade over the steadily rising cost of its overhead operations, that is, office or clerical work, material handling and storage, and maintenance. This cost had become significant to the extent that it affected the competitive position of many companies. To reduce and maintain control of overhead costs many companies turned to the management techniques which had proven so successful in shop management, such as work simplification, office layout, methods analysis, and engineered time standards. Generally speaking, these techniques paid dividends.

The success of private industry with its use of scientific management techniques in the analysis of overhead operations has encouraged a number of federal agencies to follow its example in various governmental operations, with gratifying results. Among these agencies is the Department of Navy's

Bureau of Supplies and Accounts (BuSanda) which manages a wide variety of field activities engaged in the procurement, inventory control, handling, storage, distribution, shipment and disposal of supplies, and in disbursing and accounting operations. With the lifting of the legislative ban in 1950 to utilize stop watch or other scientific measurement techniques in government

Mr. Kouzes was born 23 August 1915 in Batavia, Illinois. He attended grade and high school in Batavia, Illinois; Chillicothe Business College, Chillicothe, Missouri; and George Washington University, Washington, D.C. He received his B.A. degree in Business Administration and M.A. degree in Public Administration.

He started his career in the War Department leaving in 1940 to enter military service where he attended the Army Finance School, Ft. Benjamin Harrison, Indiana and was selected as an officer candidate; graduated from The Adjutant General's Officer Candidate School in November of 1943; and was assigned to The Adjutant General's Office, Washington, D.C. as Administrative Officer, where he served through 1946.

Leaving active service Mr. Kouzes was employed by the Veterans Administration in Washington as personnel placement and administrative officer until 1950, when he transferred to the Office, Chief of Finance, Department of the Army and served in the fields of personnel and management engineering until 1955. Since 1955 Mr. Kouzes has been Assistant Director of the Management Engineering Division, Bureau of Supplies and Accounts in the Department of the Navy.

Mr. Kouzes' outside activities are many and varied. As Major, Finance Corps in the United States Army Reserve, he actively participates in reserve officer training; lectures professionally in Business Administration at George Washington University; as a member of the Official Board of Stewards of the Mt. Vernon Place Methodist Church, Washington, D.C. he serves on several committees and teaches a class of high school senior age there; actively participates in the Alumni Chapter of Alpha Kappa Psi Fraternity; and is Chairman of the Legislative Committee, Minnie Howard School PTA in Alexandria, Virginia.

Mr. Kouzes has chosen as his subject Engineered Time Standards and Navy Supply Operations.

operations, several studies were conducted by BuSandA to determine the practical utility of engineered time standards. (ETS). The most recent and certainly the most fruitful of these studies was conducted under BuSandA monitoring at the Naval Supply Depot, Bayonne, New Jersey, during the period May 1954 to July 1955.

In conducting its studies, and particularly during the most recent one, BuSandA established several significant objectives which it strived to accomplish. These objectives were similar to those that any private industrial firm considers in studying its operations. With these objectives the studies attempted to ascertain: (a) a fair standard of productivity for each employee, (b) the most effective and economical methods and procedures for accomplishing each task, (c) the proper make-up of a work force to perform planned workload, and (d) a means of measuring and controlling the cost of the labor element.

The study at the Naval Supply Depot at Bayonne was undertaken by an ETS team composed of select Civil Service personnel from BuSandA, the Naval Supply Depot and the Naval Supply Research and Development Facility, Bayonne, New Jersey, with the guidance and assistance of a private management consulting firm. To fully equip the ETS team with background and working tools an intensive training course was conducted in the various techniques that were to be used in the study. These included methods engineering, methods-time-measurement, time and motion study, and work sampling. At the same time, the proper working climate for the study was established within the activity by wide publicity of the project through various media. Top management and supervisory personnel were given classroom instructions on the various facets of the study about to be undertaken.

The ETS team was then prepared to select those operations of the depot which would be most susceptible to the application of standards. After the selections were made, operations were analyzed by process charting and other techniques. Workload factors, such

as the process of handling material requests, were identified and broken down into work units which could be measured. After appropriate work unit counts were instituted, the manual elements of each operation were measured by stop watch or methods-time-measurement techniques. Unpredictable and mental elements, unavoidable delays, and personal allowances were determined by work sampling techniques.

When the standards were documented, compared and integrated with existing management tools, such as statistical work measurement, a system of control and reporting was established. The standards and the control and reporting system were then presented in conferences to supervisory personnel of the organizations where operations had been analyzed. In turn supervisors of these areas, guided by the ETS analysts, presented the standards to the workers and installed the control and reporting system. Installation of the standards was followed by a review of actual performance to detect any deviations from the established standards. Questionable standards were adjusted or revised and, when necessary, new standards were established as changes occurred in methods and procedures.

Following a period of observation of the standards in use, an evaluation report of the project was prepared by the ETS team and submitted to BuSandA. Representatives of the interested functional areas of BuSandA formed a committee to review the findings of the project. In its report the committee concluded that there was an application of engineered time standards to certain BuSandA field operations. As a result the Chief of BuSandA, in July 1955, approved the committee's recommendation that engineered time standards be applied to another depot-type activity and that prototype installations be made at other typical BuSandA field activities, including a Navy supply demand control point (inventory control center), Navy purchasing office, Navy regional accounts office, Navy accounts disbursing office, and Navy central freight control office.

Aside from the findings of the

Bayonne report, the study produced several unexpected results. Resistance to the "stop watch" technique for measuring performance has given way to a keener awareness and understanding of the value of time (ETS measures to very small increments of time). There has been closer adherence to methods and procedures, a prerequisite to the attainment of standard rates. A more competitive spirit has resulted among employees since employees feel that their individual work is being accurately measured against fair standards. There resulted a much more accurate measure for supervisory effectiveness (in addition to productive time, ETS precisely measures non-productive time, such as "waiting for work" or excessive personal time).

BuSandA anticipates a bright and beneficial future with ETS. It is planned that, through prototype installations, the susceptibility of engineered time standards to these specialized operations will be established. As it is determined that other operations are susceptible, and it is reasonably established that there are sufficient benefits, engineered time standards will be implemented at all BuSandA applicable activities.

Army Soon to Move AFFE, 8th Army Hqs., From Japan to Korea

United States Army Forces Far East and Eighth Army Hq., will move soon from Camp Zama, Japan, to Seoul, Korea.

The move involves no major changes in the development of army forces, since the bulk of troop strength in the Far East already is in Korea, Hq. Far East Command stated.

Eighth Army forward headquarters in Seoul will be redesignated as AFFE/Eighth Army Hq.

The rear headquarters will remain at Camp Zama.

Gen. Isaac D. White who recently assumed command of AFFE/Eighth Army, will also serve as U.N. commander in the field. His headquarters will be located in Seoul and he will command troops under the rear headquarters through a deputy commander at Camp Zama.



By Rear Admiral John D. Hayes, USN, Ret'd.

Philosophers, Principles and Naval Organization

SINCE World War II the average American has formed some very definite ideas about his country's foreign policy. These ideas can be summarized into two statements:

1. Preparation is the best way of insuring against war, and
2. Negotiations in foreign affairs should be conducted from a position of strength.

As a consequence, the problems of the armed services of the United States today are radically different from those before 1941 or 1945. The military* services now find themselves involved in a new social science, that of equating the demands of national security against the ability of our economy to meet those demands. In essence this new social science, consists of resolving two basic but conflicting requirements of our modern society, military protection and economic well-being.

The requirements for national security that have produced this revolution in American thinking have also brought some changes into our national life. One such change is that a large military establishment is now an accepted part of our political, social and economic system. Military organizations have become complex parts of our industrial society and military men now ply their trade by mass production methods.

*Military is used here in the generic sense, referring to all of the armed forces. There is, however, a need for a new word that will not have an army connotation. Such terms as *armed*, *armed forces* and *defense*, when used as adjectives, are either clumsy or not sufficiently definitive. Also, the land and air forces need an adjective of their own to serve as *naval* does for the sea forces.

Military business is now big business and big business gets noticed, examined and to some extent, regulated. Industries learned some time ago that the American people would not allow them as big business to have all of the privileges and indulgences which they enjoyed as little business. The present military establishment of three million men requires about fifteen percent of the national product to support it. The military profession likewise will not be allowed to run this establishment with either pre-war or wartime methods. In a protracted cold war logistics have to be economical as well as safe. The profession must develop a philosophy of logistic necessity to replace the philosophy of logistic plenty that gave us victory in World War II.

American industry had to face similar problems of growth and size some decades ago. Large industrial enterprises were the natural results of the industrial revolution. Before then, the only organizations of any size, besides government, were ecclesiastical or military. Industry, of necessity, borrowed many of the time-tested principles of military organization.

The situation is now reversed and the military ply their trade not unlike their brothers in industry. A logical deduction would be that industrialists may have something to teach the soldier, sailor and airman. Industrial management in the United States has produced a second industrial revolution in our time. Its methods should have application for the revolution in warfare that is also taking place.

Industry, in borrowing military organization, did not accept it out-

right. Industry's purpose was to make a profit, something very different from preparation for war or success on the battlefield. Industrial policies and methods could be tested daily by the balance sheet and so responsibility did not need to be so sharply defined. Mistakes could be detected and corrected before their consequences became critical and so command lines were not made as inflexible as in military organization.

Competition and the profit motive were part of the daily life of industry, whereas their impact on the military came only in war.



**KNIGHT
ENGINEERS
OFFER...**

**EXPERIENCED
MANAGEMENT COUNSEL
AND SPECIALIZED SERVICES
To Armed Forces Management**

Knight experience is based on the successful completion of approximately 500 assignments in a variety of specialized fields

- **Financial Management** • Industrial Funds • Standard Costs • Budgeting
- **Management Controls** • Inventory Control • Production Control • Reporting
- **Paperwork Management** • Records Management • Procedures Improvement • Work Simplification
- **Plant Engineering** • Plant Layout and Design • Materials Handling • Manufacturing Methods

If your operation will benefit by the use of these highly specialized skills, write to the Knight organization and a representative will call at your convenience.

LESTER B. KNIGHT & ASSOCIATES, Inc.
Chicago Washington, D. C. New York, N. Y.

For more facts request No. 34 on reply card

These important factors induced enquiring minds to examine industrial organization and test industrial methods. These thinkers or philosophers identified elements and established principles and above all created a literature. There is no comparable military literature although military people have been organizing and managing on a large scale for centuries.

The more notable of these philosophers, such as Frederick Winslow Taylor, Henri Fayol and Mary Parker Follett, are known to management personnel and their works need not be discussed here. These three presented the personal, practical and psychological aspects of good organization and management but there is one classic historical study on the subject. This is the work of James D. Mooney and Alan C. Reiley entitled *Onward Industry*, first published in 1931 and now out of print. A condensed version, *Principles of Organization*, came out in 1939 and went into several printings. In 1947 Mooney published a revision of the later work, incorporating the lessons of World War II. The major contribution of these authors is their historical analysis of state, church and military organizations in the ancient, medieval and modern worlds. From these historical examples they derive and define:

1. The line method of organizing.
2. The functional method of organizing.
3. The means by which the two methods are brought together in an enterprise or what they call the staff phase of functionalism. Mooney and Reiley prove historically the soundness of the line and staff concept.

Recent writers on the subject seem only to elaborate on what the earlier writers propounded. The best of these for military personnel are Lyndall Urwick and Peter F. Drucker. Urwick, an English management consultant, has done an excellent and readable synthesis of the previous works. It has the title, *Elements of Administration*, and was published in 1943. In 1952 he produced a pamphlet called *Notes on the Theory of Organization* but which deals mostly with practical aspects of the subject. Drucker's latest book is *The Practice of Management*, published in 1954.

The literature on military organization and administration is scanty. Most of what is good was written over fifty years ago by such as General Emory Upton and Admiral Stephen B. Luce in the United States and Spencer Wilkinson in Great Britain. Upton's work was saved from oblivion when Secretary of War Elihu Root had his *Military Policy of the United States* published in 1903 after it had been in manuscript for twenty-four years. Other articles on military organization by Upton and his naval friend Luce are almost unknown today because they were published in service periodicals that are still uncatalogued. Spencer Wilkinson, the Oxford professor of military history, deserves more attention than he has been getting for he influenced, as much as any man in Great Britain, the pattern of British policy prior to and during World War I.

Perhaps the most important piece of literature on military administration in modern times, and one that the profession had better not forget, is that part of the *Pearl Harbor Report* entitled "Supervisory, Administrative and Organizational deficiencies in Our Military and Naval Establishments Revealed by the Pearl Harbor Investigation." This is in Part V of the *Report* which contains the conclusions and recommendations. A whole science on the subject could be built around the twenty-five deficiencies listed therein.

No outstanding work on military organization and administration has come out since World War II, despite intense interest in the subject. The only relatively modern classic is *The Soul and Body of an Army* by the British general, Sir Ian Hamilton. It was published in London in 1921. General Otto L. Nelson's *National Security and the General Staff* is important for its treatment of the adoption of a general staff for the U. S. Army and of its reorganization in two World Wars. A more recent but rather inferior work is *Military Management for National Defense* (1950). Another is *The Armor of Organization* (1953) by Alvin Brown. This book condemns the whole military system and especially the

general staff. Mr. Brown's proposals for reorganization are far-fetched but his three pages of citations comprise the best bibliography so far compiled on this neglected subject.

These recent writers prescribe management methods for all of the armed services without carefully analysing the structure of the Navy Department. Their lack of attention to naval organization is understandable because the little that has been written about it is hard to find. But they allow their readers to assume that the Navy Department is sort of a poorly arranged version of the Army concept of the general staff. Nothing could be farther from the truth for army and navy organizations are very dissimilar. This is natural for they are manifestations of two distinct methods of thought resulting from the vast difference in warfare on land and at sea.

Principles of Organization Are Like Principles of War

Since there is no literature to speak of on military organization, it may be possible to extract some principles for it from the writings of the industrial philosophers and to list them as we do the principles of war. There should be similarity between the two lists, for war and economics are both forms of concerted human activity. To make such activity possible is the purpose of organization, administration and management.

The first principle is that of the *Objective*. This principle is so obvious that most of the older writers did not treat it. However, Lyndall Urwick gives it considerable attention in his recent *Notes*, perhaps because he has seen it violated so often in practice. Military men talk glibly about the objective being the first principle of war but when they do they are usually referring to tactical situations where the objective is comparatively easy to see. To discern the objective in a strategic or logistic situation is at times a hard job. In some quasi-military parts of the armed services, the objective seems to be regularly disregarded or forgotten.

This points to what appears to be another principle, that of the *Situation*. This is the one that Mary

Parker Follett stressed. She called it the "Law of the Situation." She held that in complex modern society it is the situation that controls and the true leader is one who responds to it. But allowing the situation to control entirely results first in expediency, then opportunism and finally in confusion and disorder.

Hence the principle of *Order* is needed. This is another principle on which all the philosophers agree. Taylor and Follett take it for granted but Fayol goes at length to explain it and Mooney and Reiley really analyse it. The danger of stress on order is that it may attain permanent form in status. Permanence is not in the nature of reality although men seem always to hope to achieve it. Life is complicated and the world is always changing, so division of labor is necessary. This is the principle of *Function*. The great contribution of Mooney and Reiley was their classification of functions into three categories. They called these determinative, applicative and interpretive. These are best illustrated by government which has a legislature with determinative function, an executive with applicative function and a judiciary with interpretive function. In industry these functional categories can be seen in the planning, production and inspection departments.

The interpretive function is the hardest to understand. It is the examining, judging, placing of responsibility function. It is also the function that is often neglected until we get into trouble. Modern business management developed the policy function and the executive function to a high degree but it habitually ignored the judging function and to some extent still does. It did not learn to inspect, judge or discipline itself, especially in its responsibilities to its employees and the public. As a result labor unions and government regulatory bodies took over this job. Recent proxy fights indicate that management had better not ignore its responsibility to stockholders.

Industrial management, through not stressing the interpretive functions, has had some notable failures. In certain cases it was not

able to get its job done. With industrial production and national security now so closely interrelated, this is a critical situation. The military forces with their age-old experience in handling men have always been ahead of industry in the personnel field. For such reasons the services should be cautious about adopting management methods exactly as they are applied in industry, even for their semi-military activities.

Simplicity and the Communicative Functions

I believe that there is one additional functional category, that of communications. Organizations cannot perform without adequate communications of all sorts. The bigger and more complex the organization, the better its communications must be. Without communications, up, down and throughout, there can be no understanding, and without understanding, there is no confidence. Without confidence there can be no purposeful organization, no matter how many charts may be drawn.*

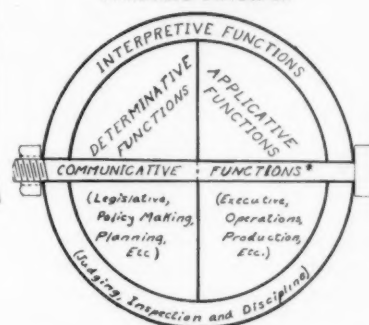
Communications are not just passing the word. The communicative functions include language, symbols, education, news media, books and periodicals. In industry it includes internal and external transfer of orders and information and also public and employee relations, recreation, training and the like. In the armed forces it includes morale in its *real* meaning, that is, a man's confidence in his weapons, in his leaders and in the men on each side of him.

The accompanying chart shows symbolically how all four functional categories are fitted together in proper organization. The two categories concerned with actual operations form the core of organization, but not all of it. They are inside of the protective envelope of the interpretive functions. The communicative functions hold all together.

The communicative functions indicate the need for another principle, that of simplicity. The one real constant in our era of rapid

* (Language, Education, Training, Morale, Public Relations, Books and Periodicals, Int. & Ext. Communications.)

Chart I
FUNCTIONAL CATEGORIES
IN ORGANIZATION
SYMBOLIC DIAGRAM



change is the capacity and capability of a human being. Modern organization, especially modern military organization, has of necessity become complex. If this complexity is not to get beyond human control, a continuous campaign to keep the structure simplified must accompany the growing complication.

The best way to gauge the optimum size of an organization is to appraise the effectiveness of the communications within it. If communications are inadequate, the organization is too large or too complicated. In such cases it has to be simplified by divorcing secondary activities. Military men, however, usually find it difficult to delegate responsibility outside of their own sphere, as for example to contract for critical or even essential services, or to use "contract logistics" as the new term puts it. Here is where a lot can be learned from industry.

If the military can depend on the civilian economy to furnish it with tanks, ships and planes, it should be able to entrust it with many of the quasi-military jobs that it is now doing itself but which are not closely concerned with combat and its direct support. With the present size of the defense establishment, this must be done if the military profession is not to become over-extended. "Watered" might be a better word. The logistic branches of all services need to do some soul-searching in this respect. There is the danger of becoming too big for our military breeches.

The next principle is that of *Direction*. It will be noticed that this principle is not called Command.

Command is only part of direction. According to Fayol, to direct or to manage means doing six things: foresee, plan, organize, command, coordinate and control.

In the military we so love the word "Command" that it has become almost a fetish. Actually the complex units that comprise military organizations today cannot be just commanded. The vast majority of officers are now in positions where they manage rather than command. Perhaps the most humorous contradiction of terms in military language is the inference that an institution of healing or of learning can be "commanded."

A great deal is also heard about unity of command. This is an ideal rather than a reality. Few people, even in the armed services, work for one boss. The important thing is to know how many bosses one has and who they are. Of course they should not be too many. Bosses too are human and the number of people they can boss effectively is limited. This is called the span of control. A lot of attention used to be given to span of control and one Frenchman, Graicunas worked it out mathematically, coming up with figures between three and six. Now the span of control is generally conceded to depend on the job to be done. Varying numbers of echelons are found in successful business enterprises. Ground military organizations must have small span of control and many echelons whereas religious organizations have only the parish priest or minister between the bishop and his flock.

So far, five principles of organization have been identified: *Objective, Order, Direction, Functionalism and Simplicity*. There may be more but many so-called principles are derivatives of those listed above. For example, the principle or "law" of the situation is a derivative of Functionalism. The "exception" principle of Frederick Winslow Taylor is a derivative of Simplicity.

Dualism—The Naval Organizational Principle

I believe that there is one additional organizational principle. This is *Dualism*, or the separation of those functions which have to

do directly with the *purpose* of the organization from those which *support* or contribute to that purpose. Among the members dualism makes the distinction between those who do the primary job and those who help them. Both categories are necessary and important but an organization is not well founded unless the two are distinguishable and in proper proportions. In military language, these categories of purpose and support are called combat and service or tactics and logistics.

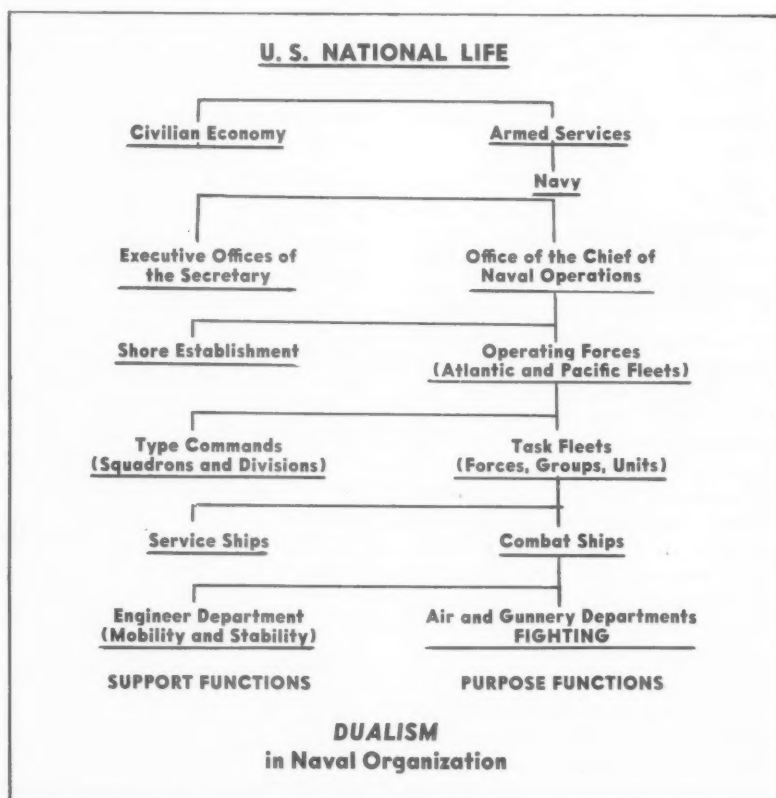
Warfare has a clarity which makes dualism easier to identify in military organization. The industrial philosophers, on the other hand did not perceive this principle. But it can be seen in a close examination of the chart of any good organization. It manifests itself in industry through the separation of production and purchasing departments when purchasing includes both goods and services. The important contribution of dualism is that it shows each member to which category he belongs and directs that he devote himself

to it only. Poor administration results when those concerned with purpose also try to run the supporting functions or when those concerned with support consider their function to be an end instead of a means.

Because of the nature of sea warfare, dualism is not difficult to achieve or recognize in naval organization. It has been incorporated for more than three hundred years in the British naval system, with its Board of Admiralty and its Navy (civil) Boards, the latter separate from, yet subject to the Admiralty. U.S. naval organization has generally followed British practice but proper dualism was not achieved until the Office of the Chief of Naval Operations was established in 1915.

Dualism became a part of the German military system in 1825 when the King of Prussia settled that the Chief of the General Staff would not be subordinate to the War Minister but be directly responsible to him. However, when the French established a General Staff after the Franco-Prussian

Chart II



War, it was given the responsibility for the entire administration of the Army. American general staff organization generally follows that of the French. The general staff system was adopted for the U. S. Army in 1903 but it hardly functioned as such until World War I. Pershing established a General Staff for the A. E. F. in France and the A. E. F. concept was taken over for the War Department and Corps areas in the postwar organization.

Organizational dualism was first identified in 1888 by Admiral Stephen B. Luce, the first President of the Naval War College and the man who found Alfred Thayer Mahan. Luce outlined this in an

article entitled "Naval Administration" in the *Proceedings* of the U. S. Naval Institute. He defined the two complimentary parts of naval organization as military and civil. Luce worked for thirty years to get definitive military direction into the organization of the Navy Department.

The remainder of this article will be devoted to discussing the organizational structure of the Navy Department, not only because it is an example of the principle of dualism but more so because it has been generally neglected by writers on the subject of military administration and management.

Concluded next month

"Safe Driving Day" To Be December 1

President Eisenhower Proclaims S-D Day

By Colonel C. W. Woodson, Jr.

President Eisenhower, through his Committee, has again proclaimed a national "Safe Driving Day" for December 1, 1955. The goal is to complete the 24 hours with no traffic accidents.

The first "Safe Driving Day" came into being through official Presidential Proclamation November 16, 1954, designating December 15 of that year as the official day.

In brief, the goal of the entire S-D Day program was that each community in the United States go through the day without experiencing a traffic crash of any type. Officials were asked to cooperate and the individual citizens to observe the letter as well as the spirit of all traffic laws, practice the ultimate in courtesy whether a driver or a pedestrian and participate in the national movement along with any local or statewide counterpart.

However, the full impact of the program was not to be confined entirely to eliminating traffic crashes. It was designed to demonstrate what the people and officials of the United States, working together, could do. The absolute elimination of traffic crashes was, of course, a Utopian theory, but it was hoped and expected that such a sharp curtailment could be achieved. It was hoped further that such a program could increase the safety consciousness of the

nation to the point at which momentum would continue through the months to come.

When the smoke cleared, deaths, injuries and crashes were less than the comparable day in 1953 had been, although traffic volumes had increased. Deaths numbered 51 against 60, injuries 966 against 1,807, and crashes 3,935 against 4,907.

A saving of 9 lives might seem a scant return, but everyone might ask himself what gladness would be in his heart if he knew one of those lives saved had been his own or that of someone dear to him. Then, too, a daily saving of 9 lives through the year would have meant 3,285 saved at its end—or nearly 10 per cent of the year's toll of 36,300.

This year, the President has proclaimed December 1 as 1955's S-D Day, preceded by intensive preparation which will officially begin Monday, November 21, on "S-D Day Minus 10."

The President's Committee will again have materials available, as well as issue progress reports in the form of locally adaptable press releases and radio announcements. The Outdoor Advertising industry has announced its full support, and such organizations as the National Safety Council and American Automobile Association will also prepare materials for distribution.

Traffic deaths last year were reduced 2,300 when compared with those of 1953. *This year the trend has reversed and they are up about 7 per cent.* There is need, and great need, for a concentrated effort during the last, and most dangerous, months of the year if we are to stay in the traffic black.

Stress always that S-D Day is not December 1 alone. December 1 is in reality a test day to show that every day of the year can be an S-D Day if the people of the nation are willing to work for it.

Members of the Armed Forces are urged to do all in their power to assist in making this day a national success by supporting local and state coordinators, participating in any promotional activities and paying careful attention to their own driving.

Aerobilt Bodies, Inc., a subsidiary of Grumman Aircraft Engineering Corp. of Bethpage, N.Y., has just opened a new \$350,000 plant on a 60-acre plot in West Athens, N.Y., for the manufacture of Grumman motor truck and trailer bodies.

HOW TO GET INVESTMENT FACTS

about Mutual Funds

I am interested in investing through the Mutual Fund method and would like to start a personal investment program in one or more Mutual Funds.

Please send me detailed information on a Mutual Fund of the following type: (Check one)

- ☐ CONSERVATIVE TYPE—Maximum security, stable income, modest capital gain.
- ☐ MIDDLE-OF-THE-ROAD TYPE—Emphasis on current income with moderate capital gain.
- ☐ AGGRESSIVE TYPE—Emphasis on growth of capital with current income secondary.

I understand that full information will be sent to me at no cost or obligation when I mail this advertisement.

Name.....

Address.....

BROWN, MADEIRA & CO.

Specializing in Mutual Investment Funds
One Wall Street, New York 5, N. Y.
AM-1

For more facts request No. 37 on reply card



Mobilization Readiness and Peacetime Economy *our supply responsibility*

by **Commander M. J. Barkdull Kahao**

Stock Control Officer
Yards and Docks Supply Office
Port Hueneme, California

The opinions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

THE DATELINE is Korea. The time—July 1953. After months of deliberate stalling in the talks at Panmunjon, the Chinese Communists have suddenly reversed course. They want an armistice in Korea. One of the provisions is expected to be the freezing of opposing forces at their respective strengths on the date of the armistice.

In Washington, the President makes a decision. Elements of the 1st Marine Division supported by the 1st Marine Air Wing will embark immediately for Korea.

Out in Port Hueneme, California, at the Navy's Yards and Docks Supply Office, we get an order to provide repair parts for over 250 vehicles and other equipment of the 1st Marine Air Wing. Deadline for delivery at shipside—eight days.

We have many parts in stock for just such an emergency, but the parts are in a reserve supply depot

1300 miles from the Marines' port of embarkation. That depot needs a list of the specific parts required for these particular equipments. We have a current file of makes and models assigned each unit. Last-minute shifts of vehicles occur to give the departing Marine units the best possible equipment.

Through electronic accounting machines we determine at YDSO that 6400 different items are required. Ninety percent of the material is available at the reserve supply depot. The bill of materials goes 1200 miles to the supply point. They break out the parts, consolidate and pack for four separate units, and provide a locator list to permit immediate access to parts upon arrival in the combat theatre. Working round the clock, the men get them shipped in 48 hours. The shipment arrives at shipside at noon on the deadline date.

Recently, we at YDSO have a different type of problem. The officer in charge of our wholesale stock point in Philadelphia advises of a group of items that isn't moving.

These are mainly commercial items that are available at parts houses in any large city. For this reason, in 1954, we adopted a policy of discontinuing these items at our wholesale stock points in the U.S. and having consumer activities order them from commercial sources. However, we have directed our consumers to order items available at Navy wholesale points until supplies are used.

Why aren't these stocks moving? Our Philadelphia wholesaler investigates and finds that prices of some of these items are higher than commercial prices. Can they reduce prices to increase sales of these items? As inventory control office, we approve.

These two problems, widely divergent in nature, indicate both a difference and certain similarities between Navy supply and the supply systems of industry.

Navy Supply System

What is the Navy's supply system and how does it operate? I describe it as a system of *centralized* control, purchase, and distribution of Navy inventories performed by a *decentralized* organization according to commodity groups. At present, there are 13 commodity groupings of Navy material. A separate inventory control office (called supply office) directs the purchase and distribution of items in each commodity group for the whole Navy. Typical groups are fuel, clothing, provisions, ordnance, electronic items, ships parts, submarine material, aircraft parts and related aviation items, general stores material (everything from office supplies to hardware), and "Yards and Docks type" material. This nondescript term is the Navy's way of describing repair parts (including tires, tubes, and batteries) for vehicles, heavy construction equipment of all types, materials handling and weight lifting equipment, as well as parts for locomotives, power generators, refrigeration and other base equipment. The term is derived from the Navy's Bureau of Yards and Docks, staffed by civil engineers who have responsibility for the technical functions of engineering, research, design and specifications for shore equipment. The Yards and Docks Supply

Office is the inventory control center for parts and material for the equipment described and for other closely related items assigned by the Navy's Bureau of Supplies and Accounts.

This Bureau, one of seven in the Navy Department, is manager of the entire Navy Supply System. It sets standard procedures, formats, and inventory control techniques for the business functions that are performed in all thirteen supply offices. The Bureau is also responsible for selection, training, and assignment of Supply Corps Officers who direct these business functions. In this way, officers in purchase, inventory control, cataloging, or accounting functions can be assigned successively to different supply offices controlling different material and still operate effectively because of standardized business procedures.

How do we get the technical know-how on material identification, design, specifications, and performance characteristics? These are peculiar to each commodity group and require experience with the particular material. The answer is that the Navy bureau responsible for the technical engineering functions for the material assigns officer personnel to the supply office to provide the know-how and direct these technical functions.

We have said that Navy supply differs from industrial supply. What are these differences? To industry, a high stock turn is required to maintain or improve profit ratios. In the military, a low over-all stock turn is the result of long-term stocks needed for military readiness. Companies like Ford Motor Company have developed techniques by which all inventory is in the supply pipeline, with freight deliveries closely scheduled and controlled so that tomorrow's production requirements are received at the plant today. In a military supply system, on the other hand, sub-assemblies and parts for military design equipment must frequently be bought in large quantities for delivery soon after the equipment. The production lines, tools, and dies are disassembled at the factory after the contract has been completed. If sub-assemblies and parts are bought

only when needed, they may not be available, or, if available, costs will be prohibitive and lead-time excessive. Military supply must be prepared to furnish large quantities of material in standard assemblies quickly in event of limited or full mobilization. The consequences of non-availability may be defeat. Second-best is not good enough in war. If victory is achieved, the cost of inventories is a secondary consideration.

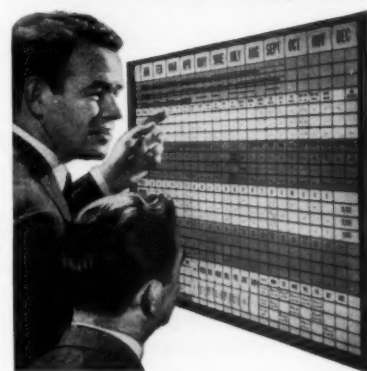
The Navy Supply System has a unique task to fulfill because of the mobility of its customers and, since World War II, because of the constantly changing intensity of need at various locations throughout the world. The cold and sometimes hot war waxes and wanes; the emphasis shifts from the Berlin airlift to Korea; then to the Formosa Straits patrol and down to the Indo-China theatre. This has led to development of management principles in inventory control and supply policies to meet this need.

Rear Admiral Ralph J. Arnold, Chief of the Navy's Bureau of Supplies and Accounts, summed up the two primary management principles guiding the Navy's inventory managers in a recent appearance before the House Armed Services Sub-Committee. He said:

"It is our primary objective to develop and maintain a navy supply system which will assure effective wartime military support at the lowest feasible cost to the nation. The accomplishment of this objective requires the central control and distribution of essential navy material.

"Material in the Navy is used at hundreds of shore installations and in over a thousand ships. The consumption of material is in excess of three billion dollars annually. The design of a service-wide supply system which will assure the immediate availability of vital stocks at the point of emergency need is obviously not an easy task. Yet, for military effectiveness, it must be done. Hundreds of consumers cannot be cast adrift to locate their own requirements without central guidance and direction. With more than a thousand consumers afloat and with many others spread all over the world, the problem of navy

You See What's Happening



BOARDMASTER VISUAL CONTROL

Graphic Picture of your operations—spot-lighted in color. You see what is happening. Saves you time, prevents errors. Simple and Flexible. Easy to operate. Write on cards and snap in grooves. Ideal for Production, Sales, Scheduling, Etc. Made of metal.

Complete price **\$49.50** including cards

FREE

24-Page BOOKLET NO. AM-60
Without Obligation

Write for Your Copy Today

GRAPHIC SYSTEMS

55 West 42nd St. • New York 36, N.Y.
For more facts request No. 30 on reply card

material control and distribution becomes one which has no exact counterpart.

"From the military viewpoint it is mandatory that stocks held at any one point in the Navy be considered available for use at any other point where the priority of need is greater. Because of the mobility of the Navy, one characteristic of supply is the constantly shifting priority of need. This moving demand cannot be predicted by any one installation, by any one technical bureau, or by any one inventory manager. This Navy-wide movement cannot, therefore, be attributed to any one or more programs or budgeted for by any one or more programs. It is service-wide supply and it is right that it should be. Central inventory control should be paralleled by a necessary degree of central distribution control to assure that immediate repositioning of material can be responsive to operational demand."

(Continued on page 44)

The Best of All Possible Armies

by Avery E. Kolb

A Management Self-Analysis In Satire

Any resemblance to the present state of affairs in the Pentagon is purely coincidental.

The Commander of The Best of All Possible Armies sat in his war room and surveyed his Most Efficient of All Possible Staffs.

"Brief me!" he cried.

The Management Platoon took two paces forward and presented charts. "Sir, we have reorganized your forces along completely functional lines and realized the utmost in economies. All agencies not directly producing reports, processing reports, or analyzing reports have been liquidated."

The Commander considered the matter, then rendered his decision. "Include it in the Program!"

The Budget Platoon took two paces forward, produced calculators, and gave the fiscal count. "Sir, we have discovered double-estimate, single-entry accounting. This has allowed us to show a savings of minus-minus four billion, ninety-nine million dollars and three cents—all in the less essential, non-administrative functions."

The Commander considered the matter, then rendered his decision. "Include it in the Program"

The Personnel Platoon took two grade jumps forward, extended RIFs and held action sheets close to their chests. "Sir, we have come up with the ultimate in job specialization. Gone are the riflemen, mortarmen, and atomic gunners. We now have the Military Specialist, High Grade, Comprehensive and Portugese Language Instructor. There is nothing he can't do—outside the field of personnel administration—and it requires ninety-nine years to train him."

The Commander considered this carefully, weighed the pros and

cons, then rendered his decision. "Include it in the Program."

The Programs Platoon did a right turning movement, subdivided into Programs Squads, and multiplied by the numbers.

"Marvelous!" cried the Commander. "Brief me!"

"Sir, we are happy to report that all primary, secondary and incidental activities have now been purged of any war-like matters and have been consolidated into the one-hundred-sixty-five Major Programs. For example, no longer will there be activities for the Shoeing of Horses, Erection of Barricades, and the Mending of Armor. We have lumped them all in the 'Pound, Drive and Maul' Program."

"I wonder what ever became of the Cavalry?" mused the Commander in a reflective moment.

"They're integrated into the Combined Arms and Services Program with infantry, armor and other outdated pre-atomic elements."

"Fine," said the Commander as he rendered his decision. "Set up a Program for Programs."

The Report Review and Analysis Platoon stepped forward, brought files into alignment, and opened drawers. "Sir, we have a report to end all reports. It is a one-thousand-two page standard document designed to answer every possible question in quintuplicate. It is estimated that one company of clerks can complete it in three years through special contractual arrangement with Commercial Industrial Business Machines Incorporated at no additional cost to the government.

"Does it cover Reports?"

"Sir, we neglected . . ."

"Develop a report of the reports and include it in the Program!"

The Publications Platoon next

stepped forward. Bugles sounded and five hundred publications engineers entered bearing baled waste. "Sir, we have provided a format designed to produce regulations and manuals on any and all subjects. Purpose, scope and general.' We estimate that this will result in the production of baled waste at the rate of five thousand tons a day. With this output we can finance the entire military establishment through the sale of scrap paper alone."

The Commander of the Best of All Possible Armies rendered his decision. "Include it in the Program!"

Following in sequence, file upon file, came the others. The Broad Planning Platoon had a formula with which to develop every possible plan regardless of the situation. The Special Projects Platoon had a factor to solve every conceivable problem without regard to facts. The Basic Training Platoon had a minimum lits of subjects to cover every hour of training. The Industrial Resources Platoon had a contract to cover all future procurement. And thus it went through the Research and Development Platoon, the Career Guidance Platoon, the Information and Education Platoon, the Incentives and Awards Platoon, the Safety Platoon, the Administrative Services Platoon, the Public Relations Platoon, the Political Indoctrination Platoon, the Work Measurement Platoon, the Legislative Liaison Platoon, the Coordinations and Control Platoon, the Historical Research Platoon, etc., ad infinitum. It was undoubtedly the largest, the greatest, the most efficient, the most economical and *"the least tainted by tangibles"* Army the world has ever known.

So the Commander of the Best of All Possible Armies took his Army into the field. In the face of the enemy pencil sharpeners spun and memo pads were raised high. The open and snap of slide rules could be heard against the busy rattle of calculators. The Platoons held their charts before them, brandished paper cutters, and charged up Bureaucracy Hill. Such a clamor and noise of battle has not been heard before. Secretaries screamed, members of the staffs went under desks, civilians rewrote

their job sheets. Tabs were torn from reports and annexes from appendices. Boards fell in on Committees. Papers fluttered down. The coke machine coughed up the last coke. The Commander broke a castor. Devastation filled the coffee bar.

"Where's my Security and Intelligence Platoon?" cried the hard pressed Commander.

The Security and Intelligence Platoon filed out of the Restricted Area, waded through the blood-red tape, and reported.

"Brief me!" ordered the Commander.

"Sir, we have done all we could. We have liquidated all security risks, labeled all papers with the nine classes of Confidential—very Confidential, a little Confidential, not so Confidential and so forth—and kept all important plans secured in the Top Secret Safes."

"Then, what happened?"

"We believe, Sir, the enemy has a secret weapon."

"Management engineering!"

"No, Sir."

"Budget justification!"

"No, Sir."

"Organization and methods examination!"

"No, S . . ."

"Requirements forecasting!"

"No, Sir. A strange, depraved, heavy shouldered, heavy hung, pack slung, bearded character with a rifle."

"What was it?" cried the Commander of The Best of All Possible Armies as he fell among his vanquished forces. "Brief me."

"A Soldier, Sir."

"Could we get one . . . for the Program . . .?"

First Synthetic Mica Plant Opens:

MARKS SUCCESSFUL CONCLUSION OF 10-YEAR EFFORT

The first plant in the world designed solely for the production of synthetic mica was opened recently in New Jersey. The new company, known as the Synthetic Mica Corporation, is a wholly owned subsidiary of the Mycalex Corp. of

America, Clifton, N. J., manufacturers of glass-bonded mica and ceramoplastic products.

Production of the highly strategic material, under the trade-name, "Synthamica," has been under way for several months. At first the bulk of the synthetic mica produced will be pulverized and bonded with electrical glass to produce Supramica ceramoplastic, an electrical insulation material that can withstand the effects of nuclear radiation and 1000° F. temperatures. Supramica components made from pilot plant batches of synthetic mica are currently being used in many classified projects such as supersonic aircraft, guided missiles and nuclear development.

Tell the average man that there are 270,568,935 stars in the known universe and he will believe you. Put up a sign saying "Fresh Paint"—and he will have to conduct an investigation.

THE ARMED FORCES MANAGEMENT ASSOCIATION—

IS an association to develop those skills of its members which contribute to effective and economical management in the Department of Defense gathering together the responsible officials, leaders, and co-workers who contribute to better management in meetings, conferences, seminars, and through personal contacts. Its National and Field chapter work groups and other activities offer members an unusual opportunity to participate in developing and keeping abreast of management methods and practices in the Department.



Who Belongs to the AFMA?

IF you are a member of the active or reserve uniformed services or a civilian employee of the Department of Defense, and are engaged in or interested in management and administration in the Department, you will find membership in the Association a worthwhile investment. The AFMA National Chapter is organized into seven divisions, affording members an opportunity to participate in Association activities in the subject matter or specialized field of their particular interest. Write today for particulars to the Chairman, Membership Committee, care of:

ARMED FORCES MANAGEMENT ASSOCIATION • DEPARTMENT OF DEFENSE • WASHINGTON 25, D.C.

NOVEMBER, 1955

25



Book Reviews

by D. D. Corrigan

Well Done

"RIGHT DOWN THE LINE,"

Edited by Charles A. Pearoe, illustrated by Kirkpatrick. (Arrowhead Books, \$2.50)

The man who said, "One picture is worth a thousand words," was a very wise man, as aptly shown by the witty and clever book, "Right Down the Line." Graphic analysis, in fact most cartoons, illustrate techniques for the development and improvement of leadership.

The artist and author use the United States Coast Guard as an example of basic precepts of leadership and all illustrations are of men in the Coast Guard.

"whether you are a skipper,
a petty officer,
or a leading seaman
this book applies to you
look it over

"Well Done" says the Secretary
"Well Done," says the Admiral
"Well Done" says the Captain
"Good Work" says the Exec.
"Fine Job" says the 1st Lieut.
"Nice Going" says the CPO
"We did it" says the crew

The seamen did—they did the work
The CPO's did—they had the know
how

The First Lieutenant did—he supervised the operation

The Exec did—he carried out the orders

The old man did—he gave the orders

But who did?
You did!"

This is how the book begins, and it continues with the problems of leadership and an understanding of the reasons of why men follow the leadership of other men. Habit, discipline, responsibility, confidence, and enthusiasm are the five reasons given for successful leadership of men.

The second half of this book is devoted to perfecting leadership. The seven principles fully illustrated are:

1. Make effective use of the psychology of the group.
2. Insure performance by the

development of good command habits.

3. Use common sense in discipline.

4. Encourage the development of a sense of responsibility.

5. Recognize and appreciate good work.

6. Look after your men.

7. Show some real understanding.

There's the picture of the seaman with an axe hanging over his head, and the descriptive line, "make punishment prompt, don't keep it hanging over a man's head," and the picture—you had better read it yourself, nothing is more exasperating than having someone explain a cartoon by words, for it is true, that one picture is worth a thousand words. Try this book for sound ideas and a clever presentation.

Counsel When Needed

"THE NAVAL OFFICER'S MANUAL," by Rear Admiral Harley Cope, U.S.N. (Ret.) (The Military Service Publishing Company, 608 pages, \$4.00).

Manual, encyclopedia, reference book, guide, the Navy as a Career, all are descriptive of "The Naval Officer's Manual." Admiral Cope has done a great service to the officers of the United States Navy and the Marine Corps in writing this informative and stimulating guide to knowledge of the Navy and its ways. Admiral Cope's distinguished career in the Navy, and six other books on naval matters, has qualified him to present this enlarged and revised third edition.

Admiral Cope stresses that the new concept of unity of action forces the naval officer to go further in his thinking. The officer of today must be well informed on more than military action. He must know history, current policies, overall concept of our and allied military forces, and should have personal attributes such as an open mind, character, high ideals, and he should view his commission not as just a job, but a career. The chapter on the defense team out-

lines the functions and organizations of the Armed Forces. This enables the reader to understand the Armed Forces as a complete unit, not as isolated groups.

A large portion of the book details the organization of the Navy from the Secretary of the Navy down to the ship's organization, ships and aircraft of the Navy, to women of the Navy, and a good picture of schools established for naval personnel.

The mission and history of the United States Naval Reserves is as imperative to the program as the organization. It would be difficult for anyone to remember all the necessary regulations as to schools, pay and allowances, promotions, and correspondence courses, and the concise listing of these items should prove of value for handy reference.

The newly-commissioned ensign would do well to follow step-by-step the outline of his career. Some mistakes are expected, but first impressions are always important, and it is smart to utilize and profit from the experience of others. The Manual helps the officer solve problems of leadership, customs and courtesies, public speaking, travel and transportation, and increases his understanding of records and reports, uniforms and insignia, and the Uniform Code of Military Justice.

From Alaska to Turkey, the overseas stations are described, giving the officer a well-rounded appraisal of housing, food, recreation, servants, and climate. Even some good down-to-earth advice is given by Admiral Cope on the advantages of overseas duty if certain wise points are remembered.

This book covers all aspects of the naval career and naval life. This is one reference book that should be used and referred to, not just kept on a shelf. It is not dull and tiresome as some encyclopedias are, but is easily read and thoroughly accurate.

Methodology

"AMERICAN ECONOMIC DEVELOPMENT," by Herman E. Kross (Prentice-Hall, 536 pages, \$8.00).

The title, "American Economic Development," may sound rather

ARMED FORCES MANAGEMENT

portentous, but while Mr. Kross has written a highly intelligent book, he has succeeded in making economics understandable to the average reader, and has taken great pains to explain and simplify theory and terminology. Economics is, after all, the way in which mankind has learned to use resources and labor to produce the material needs necessary to life. There is an everlasting attempt to obtain enough goals to satisfy man's wants and desires. Land, capital, labor, and enterprise — the four factors of production, are combined through the efforts of the citizens to determine the nation's economic success.

Mr. Kross examines the American economy scene through the viewpoint of the farmer, the laborer, capital, and business enterprise. The evolution of trade unionism and the evolution of manufacturing industry has played its part in the changing economy of the country. War, the government's role in American economic history, and the expansion of domestic commerce has also influenced economic history.

The history of American economics is a constantly changing story. In a short period America has progressed from a crude beginning to a country of highly developed skills and advanced technical processes. The challenge that faced America, the factors behind the economic growth, and what we can expect in the future as presented by Mr. Kross, makes good background material, and interesting reading matter.

First Aid To Wiser Living

"EMOTIONAL PROBLEMS and What You Can Do About Them," by William B. Terhune, M.D. (William Morrow, 190 pages, \$3.00).

Are you prepared to meet sudden emergencies? Can you handle unexpected situations? Do you get along well with all kinds of people? Have you ever had to tell a person bad news? Dr. Terhune's thirty-five years as a psychiatrist enables him to answer these questions and counsel wisely in his first aid book to wiser living.

Dr. Terhune describes the correct mental equipment a normal person should have in order to de-

velop characteristics into assets, and to face life honestly and in a mature manner. A proper education begins with educating oneself to know oneself and by resolving to use one's intelligence. Most people waste at least four-fifths of their potential intelligence by inertia and carelessness.

First aid counsel is given by Dr. Terhune for adults, older people, children and adolescents. He feels that most people are basically good. The majority of people would like to accomplish significant deeds and to help other people. A knowledge of fundamental principles will help the reader to appreciate and help others, and to understand oneself. There are certain techniques for meeting specific psychological emergencies detailed by Dr. Terhune, and it would be a great life for everyone if all people would follow the Mental Hygiene Creed listed at the end of the book.

Recommended Reading:

"THE BIG PICK-UP," by Elleston Trevor (Macmillan, \$3.00).

A novel of Dunkirk, describing the tragedy and triumph of a group of British soldiers who were trapped in the operation known as Dunkirk.

"WINSTON CHURCHILL IN TRIAL AND TRIUMPH," by Alan Moreland (Houghton Mifflin, 117 pages, \$2.50).

Many words have been written about Mr. Churchill and many more will be written, but Mr. Moreland presents a light but enlightening picture of this famous Englishman.

"GUN DIGEST," edited by John T. Amber (Gun Digest Co., 292 pages, \$2.50).

This is the 10th anniversary number of the Gun Digest. The many fine illustrations, articles and ballistic tables will make this volume a collector's item.

"THE STORY OF MAN AND THE STARS," by Patrick Moore (Norton, 246 pages, \$3.95).

A popular book on astronomy which serves as an introduction to the sky, telling the history of the



Why do so many success-minded people take the Dale Carnegie Course? This can be answered for you, by requesting a new free booklet: **WHAT THE DALE CARNEGIE COURSE CAN DO FOR YOU**, which can be yours without cost by circling number 99 on the enclosed product card.

earth and astronomy, theories of the universe, and skeptical excursions.

"SUCCESSFUL LEADERSHIP IN BUSINESS," by Charles A. Cernami (Prentice-Hall, 224 pages, \$4.95).

Here are good guides to handling difficult situations. Simple rules well defined show typical everyday situations. Easy to read.

Piasecki Helicopter to Change Name To Vertiplane Corporation

Piasecki Helicopter Corporation announced recently that the name of the company will be changed to Vertiplane Corporation.

The name change, which has been under consideration for several months, was made to identify the firm more fully with the broad field of vertical flight, which includes in addition to helicopters, VTOL (vertical take off and landing) aircraft, and convertiplanes (aircraft that take off and land as helicopters, but fly as conventional aircraft).

"The new name, Vertiplane Corporation, will more fully describe our current activities and the scope of future operations," explained Don R. Berlin, president. "In addition, the change will remove the confusion that now exists due to the presence of two firms with similar names."

New Preserver

WASHINGTON — The Navy has a new type life preserver that provides head support for an unconscious man in the water. The preserver, a carbon dioxide capsule-inflated type, is worn in the small of the back. When inflated it automatically turns the survivor on his back and keeps his head well above water.

ARMED FORCES MANAGEMENT advertisers support and are familiar with the needs of the Armed Forces.



NEWS BRIEFS

from the

SERVICES

Seattle Port of Embarkation, Seattle, Washington. SEPE which next year is scheduled to begin operation under the Army Industrial Fund, are phasing in the switch not only in their organization, but recently held a course of nine sessions for 36 employees explaining the principles and related procedures. The course was under the direction of Mr. E. G. Auerswald, President of Auerswald's Accounting and Secretarial Schools.

New York Naval Shipyard, New York. The super-carrier Saratoga was launched in colorful ceremonies last month and has joined her big sister, the Forrestal. Mrs. Charles S. Thomas, wife of the Secretary of the Navy, christened the vessel, which was launched because of her great size by flooding her dry dock.

United States Coast Guard Cutter Eastwind. A busy ship these days, the Eastwind returned from the Arctic late last month and will soon depart under the operational control of Task Force 43 with the icebreakers Glacier and Edisto to scout the Ross Sea, pending the arrival of the remaining sections of the Task Force.

Naval Air Missile Test Center, Point Mugu, California. A new high speed electrical data processing machine has recently been installed to process data collected during the launching and flight of guided missiles. The electronic wizard, called the IBM 650 Magnetic Drum Data Processing Machine, combines an advanced memory device and a stored program feature to become a powerful electronic assistant to management for engineering requirements.

Fort Monmouth, New Jersey. A new voice-powered telephone completely independent of wires and batteries and weighing only a pound and a half that will continue

to operate as long as the user keeps talking into it, has substituted voice-energy for electric energy in transmission. Further development plans for a companion receiver weighing about three ounces and powered by the same source, may well revolutionize military communications.

U.S. Marine Corps Air Station, Cherry Point, North Carolina. The annual rainfall record for the station was broken during Hurricane Ione when the rain reached a peak of 8.99 inches, which, when added to the total of 1955, came to a sopping 67.62 inches as of mid-September. Hard-hit by Miss Ione, the station in true Marine tradition weathered her through.

USS Ashland, Norfolk, Virginia. A group of civilian and naval scientists departed recently from Norfolk aboard the USS Ashland (LSD-1), to launch instrumented balloons and balloon-borne rockets in the vicinity of the North Geomagnetic Pole. As a part of Project SKYHOOK, the group will make a series of observations during a two-week period of the primary cosmic radiation and meteorological variables of the atmosphere at very high altitudes in northern latitudes during a two-week period.

308th Bombardment Wing, Second Air Force, Hunter Air Force Base, Savannah, Georgia. The famous Mackay Trophy was awarded last month, for a spectacular and perfectly executed 10,000-mile non-stop flight by two B-47 six-jet bombers from the

A limited number of leatherette bound copies of **ARMED FORCES MANAGEMENT, Volume 1, October 1954 through September 1955,** are available at \$10.00. Those organizations and individuals who have already ordered Volume 1, need not reorder. It is requested that orders be addressed to Librarian, **ARMED FORCES MANAGEMENT, 208 South Second Street, Rockford, Illinois.**

308th. The swept-wing Stratojets manufactured at the Marietta, Georgia plant of the Lockheed Aircraft Corporation, were refueled four times in flight, twice in complete darkness.

Naval Aeronautical Test Station, West Trenton, New Jersey. The new \$41,000,000 laboratory in which airplane engines can be tested at extreme altitudes and supersonic speeds without putting either men or machines in danger, has been completed and represents the most complete and complex engine test facility ever constructed.

Fort Belvoir, Virginia. An electronic computer, Monrobot V, now undergoing engineering tests, is expected to speed up the production of military maps. Resembling an office desk and weighing about 1500 pounds, a built-in keyboard permits entering the problems in their algebraic form. Capable of turning out trigonometric calculations to ten-place accuracy, complicated engineering calculations can be accomplished with simplicity and speed.

Naval Air Station, Alameda, California. NAS Alameda has become the first installation of its type to use television for the control of aircraft. Installed by Kay Laboratories of San Diego, the \$47,780 remote controlled closed television system will include three 16-mm cameras which are placed at the ends of the most active runways, and relay pictures to three video monitors in the control tower. Operators will be able to scan the runways and have unobstructed views of runway operations.

Strategic Air Command, Offutt Air Force Base, Nebraska. Two Air Force Bases of SAC have been renamed in honor of two Air Force fighter pilots who distinguished themselves in action against the enemy in World War II. Great Falls Air Force Base will be redesignated Malmstrom Air Force Base in honor of Colonel E. A. Malmstrom, USAF, who died last year in an aircraft accident near the base. Sedalia Air Base, Missouri, will be renamed Whiteman Air

Force Base to commemorate Second Lieutenant George A. White-man, who was killed at Pearl Harbor while taking off under fire to engage the enemy.

San Francisco Port of Embarkation, California. A new milestone was reached recently with the movement of the 60,000,000th measurement ton of cargo since January 1, 1942. A portion of the last few tons was the "makings" for holiday feasts for Army and Air Force personnel in the Pacific. Careful timing by Port authorities is essential to provide the many tons of perishables just in time for Thanksgiving, Christmas and New Year's feasts. In the brief informal ceremony presided by General W. J. Deyo, Jr., Commanding General, it was concluded that the total tonnage if laid end to end in one-ton lots, would provide a bridge 23 feet wide from SEPE to Pusan, Korea.

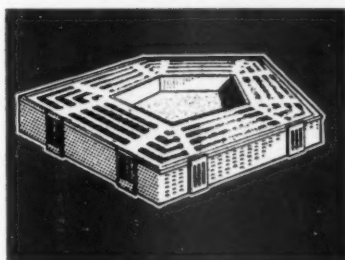
Pensacola Naval Air Station, Pensacola, Florida. Is SAFETY a part of good management? We agree, and so does Pensacola in a most unique idea. Lovely June Mann, Miss Pensacola Navy of 1955, is helping the station safety division, by visiting various shops asking employees if they are wearing safety shoes. The first to answer "yes" receives a new pair in a contest sponsored by the shoe company that supplies the NAS Safety Shoe Store.

Wright-Patterson Air Force Base, Ohio. Executive management of the Air Force's participation in the Armed Forces drive to standardize nearly four million military supply items has been assigned to the Air Materiel Command. The program includes (1) Reduction of the number, sizes, kinds or types of generally similar items. (2) Development and use of single standards and specifications. (3) Elimination of overlapping and duplicating item specifications. (4) Development and use of identical or similar engineering documents, practices, and procedures, including methods of packing, packaging and preservation.

U. S. Naval Communications Station, Norfolk, Virginia. The

Navy's newest inter-continental voice, now on the air, is capable of spanning the whole western hemisphere. The new station which

required more than three years for its construction, was built to provide major communication support for the U.S. Atlantic Fleet.



Washington Management

Department of Defense. The Department disclosed recently that work has begun on the project to hurl a small man-made moon on an earth-circling journey into outer space. A contract for the rocket launcher which will hurl the satellite into space has been awarded the Glen L. Martin Company of Baltimore, Maryland, builders of the Viking rocket which set an altitude record of 158 miles for a single-stage rocket.

Department of the Army. Lieutenant General James M. Gavin, USA, has been named to the new post of Chief of Research and Development. The addition of this division will mean that the Army will have five Deputy Chiefs of Staff, and is another step to strengthen Army Research and Development.

Department of the Air Force. The Air Materiel Command last month assumed direct operational control of all depot facilities of the Far East Air Forces, and direct responsibility for materiel support in the European Theater. The new operational plan increases the logistical responsibility of the Air Materiel Command, which already included direct materiel support to the Alaskan Air Command, the Northeast Air Command, Spain, and the Caribbean Air Command. Accomplished without the movement of personnel, the move was made upon a recent management survey.

Department of the Navy. A new and relatively inexpensive method of conducting research in the upper atmosphere, has recently been announced by the Navy. In a recent

test, a Navy fighter, flying at 30,000 feet, launched small rockets which reached 90,000 feet. The office of Naval Research has named the new technique "Rockair," and while they cannot reach altitudes penetrated by larger rockets launched from the ground, their comparative inexpensiveness opens doors to research previously ruled out because of the cost.

Department of Defense. Seven of the 19 proposals for business reorganization within the department made by the Hoover Commission, have already been approved by Secretary of Defense, Charles E. Wilson. Continued studies toward adoption of the remaining 12 are being continued by defense officials.

Department of the Air Force. An announcement through the Air Materiel Command to dispose of surplus property with an original acquisition cost exceeding \$1 billion will be accomplished during the fiscal year ending 30 June 1956. All property is first screened for use by other Federal agencies and then sold on surplus sales. The disposal will not only return funds to the department, but save additional dollars necessary to store, inventory and keep stock records.

Department of the Navy. (MSTS). Captain C. R. Dudley, USN, has assumed command of MSTS NorPac Subarea. In relieving Captain J. R. Topper, USN, he becomes the third commander of NorPac.

Department of Defense. A series of meetings between military officers and industrial executives to discuss industrial mobilization

planning, were sponsored by the Department of Defense last month in California. Conferees discussed policies in industrial mobilization planning, the stockpiling program, lay-aways for industrial equipment, conservation of critical materials and accurate lead-time schedules for realistic planning.

Department of the Army. The creation of the new Army Aviation Division within the office of the Assistant Chief of Staff, G-3, has added coordination and control to the expanding program. Headed by Brig. General H. H. Howze, USA, and assisted by Colonel W. R. Williams, both veteran aviators, a new and more important role is ahead for Army Aviation.

Department of the Air Force. The Strategic Air Command's massive attack on red tape has been so successful that plans are being finalized to start it Air Force-wide. During the past year, more than 1,000 regulations, manuals and pamphlets were eliminated in an all-out effort to streamline administrative procedures.

Department of the Navy. A recently completed organizational management study has resulted in several changes with the Bureau of Aeronautics. R. Adm. J. S. Russell, USN, Chief of the Bureau and a management-wise officer, has established the offices of an Assistant Chief for Procurement, and an Assistant Chief for Field Activities. The Procurement Group separates for particular emphasis the importance of business activities; it is concerned with contracting, industrial planning, production and quality control of aircraft, guided missiles, target drones, and related material. The formation of the Field Activities group is aimed toward better support of Fleet Activities at Naval Aviation bases ashore.

Department of the Army. At a recent ceremony appointing William H. Martin as Director of Research and Development, Army Secretary Wilber M. Brucker, assigned the highest possible priority on the research and development of new weapons for the Army.

Department of the Air Force. The Office of the Surgeon General reported recently that seven new hospitals have been completed in the Air Force program to provide modern medical facilities on every permanent base. The new hospitals at Edwards AFB, Travis AFB, Laredo AFB, Foster AFB, Sedalia AFB, and Loring AFB, leave a balance of 12 others in various stages of construction.

Department of the Navy. The first Joint Military-Industry Packaging and Materials Handling Symposium, sponsored by the Department of the Navy (Office of Naval Material) and with the cooperation of the Departments of the Air Force, Army and Commerce, was a most successful affair last month in the Nation's capital. A host of particularly high-level service and industrial executives were in attendance, and all expressed a desire for a repeat performance.

United States Marine Corps. A new Radar Guidance System that can direct aircraft flying blind onto targets and release bombs with the accuracy of present-day artillery promises to be a great step forward in close air support of ground troops. The system can accommodate both propeller and jet aircraft.

Department of the Air Force. The 17th Tactical Missile Squadron, the Air Force's fourth TM-61 "Matador" squadron has been activated by the Tactical Air Command at Orlando Air Force Base, Florida. Two squadrons were deployed to Germany by TAC last year. The third is presently in training at Orlando.

Department of Defense. Bingo has been approved as a morale builder and may be played on most military installations. Cash prizes cannot exceed \$100 for the evening's play, and carry-over prizes will not exceed \$300.

Department of the Army and Department of the Air Force. Reserve commissions to male nurses have been approved and will be members of the Nurse Corps receiving the same assignments and responsibilities of female nurses.

Department of the Navy. For the first time since the end of World War II, this month the Navy will use the draft to keep up its strength. Beginning now and until next June, 56,000 men will be inducted for two year hitch.

Department of the Air Force. The 1955 World-wide Comptroller Conference was held in the Pentagon with all major command comptrollers in attendance late in September. Significant events during the past year and projected plans for the coming year were discussed at the conference.

Department of the Army. The first group of young men between 17 and 18½ years of age who have enlisted in the Army Reserve for the six months active duty-for-training program authorized under the new Reserve law, began their training cycle last month.

Department of the Navy. Six of the largest and most powerful landing ships, tank (LST), will be constructed under contract awards totaling \$45 million. Like their prototype LST-1173, they will have an overall length of 442 feet, a beam of 62 feet, and a light displacement of 3,500 tons.

Department of the Army. Lieutenant General John H. Collier, USA, has assumed command of the Fourth Army, with headquarters at Fort Sam Houston, Texas. General Collier succeeds General Samuel T. Williams, who has been assigned as Chief of the Military Assistance Advisory Group, Indochina.

United States Marine Corps. Major General Robert H. Pepper, USMC, former commanding general of the Fleet Marine Force, Pacific, assumed command early this month of the Marine Corps Headquarters, Department of the Pacific, with headquarters in San Francisco, California.

Department of the Navy. Through the services of the Navy Small Business Program, a total of \$750,100,000 in contracts were awarded to small business firms during fiscal year 1955 for the pur-

chase of aircraft, ordnance, ships, electronic equipment, and other material and services. Over the past six years, the Navy reported that small business firms secured \$6,700,000 of the \$32,958,000,000 spent.

Department of the Navy. Rear Admiral Stuart H. Ingersoll, USN, has been named to succeed Admiral Alfred M. Pride, USN, as Commander of the U.S. Seventh Fleet. Admiral Ingersoll upon assumption of command next month,

will be promoted to Vice-Admiral.

Department of the Army. All Army Ports of Embarkation and their out-ports and sub-ports in the United States have been reorganized into three Transportation Terminal Commands responsible for all terminal operations and related activities. The Atlantic Terminal Command, the Gulf Terminal Command with headquarters in New York, New Orleans and San Francisco respectively, are the new designations.

paid. As creditors, bondholders have a prior claim, which must be met before anything can be paid to the stockholders, but they have no voice in the management of the company. Stocks represent actual ownership in the company. Stockholders share in the profits of the company in the form of dividends, and they vote in the election of the directors.

Dear Editor:

Have you prepared as yet your 1956 cover and feature schedule? I am interested in knowing if our Bureau will be featured. We will enjoy your publication.

John H. Peterson
Commander, USN
BUY&D

Dear Commander:

The following are the tentative cover and feature schedules for 1956. All have been confirmed with the exception of The President. As you can see, we are proud to include the Bureau of Yards and Docks in our August issues.

1956

January—General S. D. Sturgis, USA, Chief of Engineers
February—Admiral R. F. Arnold, USN, Chief, Bureau of Supplies & Accounts
March—General E. E. Partridge, USAF, Chief, Air Defense Command
April—General W. M. Creasy, USA, Chief Chemical Officer
May—Admiral A. G. Mumma, USN, Chief, Bureau of Ships
June—Admiral K. K. Cowart, USCG, United States Coast Guard
July—General E. T. Rawlings, USAF, Chief, Air Materiel Command
August—Admiral J. R. Perry, USN, Chief, Bureau of Yards & Docks
September, General K. L. Hastings, USA, Quartermaster General
October—Honorable Dwight D. Eisenhower, President of the United States
November—General C. F. Schilt, USMC, Director, Marine Aviation
December—General O. P. Weyland, Commander, Tactical Air Command

A most successful seminar was held at the Park Sheraton Hotel in New York on October 20-21 by the Institute of Management Sciences at their second annual National Conference. Interesting sessions were presented by 35 business leaders and educators. Over two-hundred business executives, educators, and other individuals engaged in Operations Research studies took advantage of these timely presentations.

Letters to the Editor

Dear Editor:

During the brief time that I have subscribed to your magazine, I have been impressed with the wealth of technical data in your chosen field that you manage to publish. Despite the establishment of several service courses in this general area recently, most officers (and other interested personnel) who wish to improve their competency in this subject, find that their prospects of attending a resident course are limited and that there are few extension courses which provide the same background.

I feel therefore that your association could render a very real service by initiating a correspondence course in military management. I realize that this is a task not commonly assumed by a publishing concern but feel that your clientele would be receptive to it and that the necessary material must be accumulated during the gathering of your articles. It would be undoubtable evidence of your real interest in this subject if you could sponsor even a basic course covering it.

Sincerely yours,
Lt. Col. Curtis H. O'Sullivan
San Francisco, California

Editor's Note:

Thank you for your letter Colonel Sullivan, and while a complete correspondence is not possible for us at this time, we are presently negotiating with a leading University

for a series of 12 features which will be a basis for military management growth and expansion. The first of these is scheduled for our January issue, and we will appreciate your comments as the series develops.

Dear Editor:

Can you supply me with three back issues of ARMED FORCES MANAGEMENT, December, April and May? I unfortunately loaned mine to individuals who did not return them, and would like the complete set.

Captain Ralph DeGarro, Inf.
Fort Lewis, Washington

Dear Captain:

We are forwarding you a December and April copy, however our supply of the May issue is exhausted. There are a few bound volumes left at \$10 which include our first 12 issues.

Dear Editor:

This may seem an odd question, but too settle an argument, what are the differences between corporation stocks and bonds?

1st Lt. Arthur E. Fleming
APO 942, Seattle, Wash.

Dear Lieutenant Fleming:

Bonds represent money that has been loaned to a company, and bondholders receive a fixed amount of interest paid at regular intervals. Each bond has a maturity date, on which the principal must be re-



SERVICE SCHOOLS

Scott Air Force Base, Illinois. Sixteen officers and seven civilian employees are enrolled in Management Course (OL7331), the fifth conducted at Scott this year. Eighty-eight students since the beginning of the year have completed the base level management course, designed to improve management techniques at this installation.

Army Information School, Fort Slocum, New York. Approval has recently been received of a school crest to be worn by all staff personnel. Consisting of a disk of blue at the center with three stars of white surrounded by a shield of white, this colorful crest represents each branch of the service.

1st Coast Guard District, Boston, Massachusetts. Admiral Roy L. Raney, commander of the district, has recently announced a new school located at Scituate Lifeboat Station. Designed for personnel engaged in lifeboat station duty, a two-week course stressing the latest life-saving methods, communications, artificial respiration, old-fashioned surfboat operations and all phases of rescue work are given.

Brooklyn Army Terminal, New York. Dean Philip G. Hensel and Professor Ralph E. Lancaster of the University of Toledo, Toledo, Ohio, recently conducted the second week of the Army Industrial Funding General Accounting Course being given at the Brooklyn Army Terminal.

Lackland Air Force Base, Texas. Class 55-C, consisting of 119 members were given diplomas and gold bars last month in colorful ceremonies at Lackland. Six of the graduating class were WAF officers. Awards were presented by Major General John H. McCormick, USAF, Base Commander and Brig. General Cecil E. Combs, USAF, deputy commander, Crew Training Air Force, Randolph Air Force Base.

Submarine School, New London, Connecticut. Applications have been received from 185 junior line officers to attend the six-month training course at the school. Applications have been received from 185 junior line officers to attend the six-month training course at the school. Applications are presently being screened by the Bureau of Naval Personnel who will select approximately 120 students for the class convening in January.

Kessler Air Force Base, Mississippi. The Management School recently graduated a class of 81 officers, airmen, and civilians from their seven-week course. Kessler's management school has been in operation since 1943 and has graduated many management-conscious personnel.

Army Supply Management Course, Fort Lee, Virginia. Honorable Thomas P. Pike, Assistant Secretary of Defense, participated in the recent graduation exercises for 94 high ranking officers and civilians. Lt. Col. Lillian Harris, a member of this class, became the first woman to be graduated from the Army-wide schooling program.

Naval Schools Command, Newport, R. I. Twenty-four women officer candidates, were recently commissioned ensigns in the Navy. Captain William B. Perkins, USN, Commandant, administered the oath of office. The class, which is now taking an additional eight weeks of training, will soon be assigned to first duty stations.

Mats NCO Academy, Orlando Air Force Base, Florida. The initial class of 125 senior non-commissioned officers will graduate on the 22nd of this month from the new NCO Academy which began operations on October 17th. The second class which will open in January will be followed by subsequent classes at six week intervals.

Artillery and Guided Missile School, Fort Sill, Oklahoma. The annual general officers atomic re-orientation course, which is presented jointly by the Department of Tactics and Combined Arms and the Department of Materiel, held recent graduation exercises. Designed to bring senior officers up to date on the latest use of atomic weapons, the course was under the direction of Lt. Col. J. T. Strawbridge, USA.

Vance Air Force Base, Oklahoma. Colonel Chester P. Gilger, USAF, Wing Commander, presented certificates of completion to ten Vance personnel last month, who completed the 40-hour primary management course.

Army Aviation School, Camp Rucker, Alabama. Celebrating the end of its first year at Camp Rucker, the Army Aviation School announced that more than 2,000 officers and enlisted men will be graduated from 13 courses of study this year.

Stead AFB, Nevada (AFPS)— This sprawling air force base 14 miles from Reno graduates courage by the planeload.

It houses the rugged USAF Advanced Survival School, the proud alma mater of thousands of airmen who fly the nation's combat aircraft.

Its curriculum teaches escape and evasion tactics for future wars. Despite published reports that it is a "torture school," less than one-half of one per cent of the 29,000 airmen who have taken the course have failed to make the grade.

First organized at Fort Carson, Colo., in 1949 by SAC, it was shifted here in early 1952. In 1954 it became part of the Air Training Command's Crew Training AF.

Its colorful backdrop, the jutting Sierra Madre mountains, is nature's school room for learning POW evasion tactics.

The 17-day course is broken down into two phases. During the first week, special instructors—many of whom were POW's in World War II and Korea—drill the airmen in survival tactics.

Then they are taken to the Plumas National Forest in the Sierra Madres, about 65 miles from

here. They are told to find their way back to the base without being captured by instructors who take the role of the enemy. They are given nine and a half days to do it.

This gruelling trek is made as realistic as possible, lacking only the dangers of actual combat. The men have theoretically been shot down over enemy territory and are on their own. An instructor accompanies them but only charts their progress, never offering help of any kind.

They are given the minimum of equipment and only enough food to last for two and a half days. For the remaining seven days they have to fend for themselves. The individual food ration is scanty—3 carrots, 3 potatoes, 3 onions and a small box of survival rations that includes dried meat, fruit bars, powdered coffee and tea.

The students of survival also are given an improvised sleeping bag, a canteen cup, pocket and hunting knives and a minimum of other equipment.

According to the school's commandant, Col. Burton E. McKenzie, "it's not a very pleasant experience, but it tells us whether the men are capable some day of going through something which may be far more rugged."

Rations soon run out and they must live off the land or face starvation. Yet the airmen have been so well trained in survival tactics here that none has been seriously injured or hospitalized since the course started.

Some men are captured. These face interrogation at a simulated enemy camp, but only on a voluntary basis. It is realistic but never more than a man can take and lasts about 30 minutes. Few have broken under questioning.

School officials point out that no one is "degraded or humiliated" during the interrogations. All men are shown exhibits of instruments which were used in communist POW camps—sunken coffins, sweat boxes and vertical boxes. But only those who volunteer to test their courage are subjected to these devices, and then only from two to four minutes.

As one SAC airman said, "Everyone hates to come here, but we can't help but appreciate what this

training does for us. It can't be duplicated except in time of war, and then maybe it's too late."

American Machine & Foundry Ballistic Test Station, Colorado Springs, Colorado. Technical representatives of principal government ordnance agencies attended a two-day seminar recently to discuss Army and Navy-sponsored ordnance research and development projects and to witness extensive demonstration firings of ordnance equipment. The first seminar of its type to be undertaken by AMF, it was enthusiastically received by all in attendance.

Aerial Navigators' School, MCAS, Cherry Point, North Carolina. Making the voyages of Ulysses seem like a weekend sojourn by comparison, 14 Marines recently traveled 8,265 miles during an 11-day training flight that took them to London, Copenhagen and Keflavik, Iceland, before returning to Cherry Point. Traveling in an R5D transport, which had been converted into a flying classroom, the

trip provided the students with flying navigational experience.

Army War College, Carlisle Barracks, Pennsylvania. Brig. General Max S. Johnson, USA, has assumed command of the Army War College, succeeding Major General C. D. Eddleman, who has been assigned to the office of the Army Chief of Staff in Washington.

The Judge Advocate General's School, U. S. Army, Charlottesville, Virginia. The Procurement Law Division of the Judge Advocate General's School recently completed its second special three-week Procurement Law Course and its eighth two-week Contract Termination Course for military and civilian lawyers concerned with Government procurement activities. The Procurement Law Course provides instruction and training in the legal aspects of Government procurement, including Government contract law, procurement policies, methods of acquisition of supplies and services, termination of contracts, disputes,



FREE LAYOUT SERVICE

...assures better storage facilities for less money

Take advantage of Equipto's Free Layout Service to obtain valuable advice on the number and type of storage units to buy ... complete floor plans and elevation drawings showing best way to arrange units within your allotted storage area. You will thus be able to make maximum use of your floor space, save steps, speed customer service, and simplify inventory and stock control.

If you would rather lay out your own facilities, send for fact-crammed, fully illustrated booklet, "How to Solve Your Storage Problems."

Both "assists" are further evidence of Equipto's primary concern with providing super-efficient storage facilities—not in merely selling equipment.

Equipto

Division of Aurora Equipment Co.

614 Prairie Avenue, Aurora, Illinois
Steel Shelving ... Parts Bins ... Drawer Units

For more facts request No. 36 on reply card

and methods of disposal of Government property. The Contract Termination Course is designed to cover the procedures and legal principles applicable to termination of contracts for the convenience of the Government, including the basis for settlement, termination of subcontracts, termination inventory and disposal, payments, special problems, renegotiation and taxes. A total of 477 Government lawyers (GS 7 through 15, and Second Lieutenant through Colonel) have attended these special courses. The lawyers have come from the legal offices of the Secretary of Defense, the Navy, the Air Force, the General Services Administration, the General Accounting Office, the Armed Services Medical Procurement Agency, the Armed Services Board of Contract Appeals, and the following organizations within the Department of the Army: Office of the Assistant Secretary of the Army, Office of the Comptroller of the Army, Office of the Deputy Chief of Staff for Logistics, all seven Technical Services, Army Audit Agency, Office of the Inspector General, Office of the Judge Advocate General, Office of the Chief of Finance, the Continental Armies and Overseas Commands, and the National Guard Bureau and the United States Army Reserve. Future courses of a similar nature are planned for the spring and summer of 1956.

Command Management School, Fort Belvoir, Virginia. The Command Management School, offering the Army's highest level management course, played host recently to the Ordnance Corps on the first of its "Technical Service" days. Ordnance Day as the occasion was termed, began when the Chief of Ordnance, Major General M. L. Cummings, USA, arrived from the Pentagon. Technical Service days have been inaugurated to point out to each service how the instruction at the school can effect their personnel and methods of operation. Accompanying General Cummings were General W. E. House, Colonels B. B. White and R. R. Klander-man, Captain William Mundorf, Mr. J. C. Zengerle and Mr. F. C. Crotty, all from the office of the Chief of Ordnance. Met by Major General Louis W. Prentiss, Com-

manding General of the Engineer Center and Colonel Frank Kowalski, Jr., Commandant of the School, the visitors were given a tour of all facilities.

Air Force R.O.T.C. Detachment 805, A&M College, College Station, Texas. Colonel Henry Dittman, USAF, newly assigned Professor of Air Science, defined leadership and management as the primary mission of the Corps of Cadets in an opening address to students.

Savanna Ordnance Depot, Savanna, Illinois. The Depot was a recent host to the Southern Wisconsin and Northern Illinois Firemen's Association at the 19th Annual Fall School. Colonel Wilton B. Moats, Commanding Officer, in sponsoring the program not only endeared the Depot to all participants, but was able at first hand to witness some of the latest techniques and methods in fire-fighting.

Junior AP's Formed To Train Kids And Help Regulars

by T/Sgt John Schneider

Teen-aged sons of Langley military personnel comprise "The Auxiliary Air Police," a newly formed organization which was originated on this base by Major Cecil E. Burkett, base provost marshal, and believed to be the first of its kind in scope in the Air Force.

Purpose of Formation

Primarily the group was formed to encourage boys to participate in an organization wherein their spare time could be utilized constructively by a program which would be both interesting and instructive to them the year-round, and relieve the Air Police of some of their work load. Major Burkett puts it this way: "People request many things from us that these teen-agers could very capably handle."

Trained Competently

All members are trained by competent Air Police instructors, and are given the opportunity to see and learn firsthand just how the Air Police function. They ride in the vehicles, take fingerprints, stand guard mount, drill and generally work hand-in-hand with the Air Police. They have their own uni-

forms which consist of fatigues, brassards, caps and black shoes.

Divided Into Sections

The boys have divided their group of 23 (growing steadily since the first meeting July 16 when there were only 10 present) into three sections—traffic, law enforcement and investigations. According to their mentor, 2d Lt. Jerry Tobias, the boys stress that theirs is not a "tattle tale" organization.

Traffic

The traffic section works with school safety patrols and has in the process of formation a bicycle patrol, whose purpose is to assure that the younger children are cognizant of and abide by traffic regulations. They ride school buses to protect the children and relieve the Air Police for other duties. Only last week they completed the assignment of handling traffic problems in conjunction with the operation of the Langley Summer Bible School. They also engage in traffic survey work.

Law Enforcement

The law enforcement section checks on vandalism on the base. The boys run down leads and maintain a vigil for violators whom they report to the Air Police.

Investigation

The investigation section checks decals and license plates for expiration and authenticity. They seek lost dogs, personal belongings and search for lost or strayed children. In certain instances they check bicycle serial numbers.

All in all, they render a public service to the people on the base, receive invaluable training, get to do some sleuthing a la Dick Tracy and Joe Friday, and keep themselves out of mischief.

When a new employe at Weirton Steel Company begins his job, he receives a badge—bright orange in color—which he wears for a period of 520 hours. This distinctive marker serves to notify his co-workers that in addition to learning his new job, the neophyte is receiving training in safe working practices, and in quality production. Weirton "old hands" can then pitch in to teach the newcomer "the ropes" and at the same time, offer an informal welcome.

Periodic Review

(Continued from page 13)

Evaluation and gets under way as soon as completed questionnaires are received. The completed questionnaires are reviewed, both to add constructive comment and to extract items for corrective action at command headquarters, and then forwarded to the respective report initiating agencies. Step 6, a review and analysis by the initiating agency of the completed questionnaires, begins as soon as the questionnaires are received from major command headquarters. This analysis culminates in a review decision and a plan for its accomplishment. These decisions and the target dates for their accomplishment are formalized in status report made to PRAD. Step 7 represents a review and analysis by PRAD of the decisions reported and a follow-up of the corrective actions recommended.

Chart 3 (not inclosed), DA Scheduling, shows in more detail the activities carried out in Steps 1 and 2. The number and colors shown on this chart and the subsequent two charts correspond to the numbers and colors shown in Chart 2. Not less than 60 days prior to the beginning of the review quarter (by July 31 in our example), the reports control officer of the initiating agency selects the reports to be reviewed and a sample of preparing agencies to evaluate them. He bases his selection of reports on such factors as the amount of workload imposed by a report, recent complaints about a report, the age of the directive and the number of amendments to the directive. Concurrent review of related reports is encouraged. Having selected the reports to be reviewed and the sample of preparing agencies to evaluate them, he then prepares a review schedule for each major command involved. These schedules are submitted to PRAD, OCA by 31 July.

As indicated by Step 2, in the the next half month (between August 1 and 15 in our example), PRAD collates the schedules for the various commands, spot-checks them for the accuracy of the selections, and determines the adequacy of the sample selected. They may be approved as submitted, or modified

by deletions or substitutions. When approved, they are transmitted to the major commands concerned so as to allow them adequate scheduling time prior to the field evaluation period.

Chart 4 (not inclosed), Field Scheduling and Evaluation covers Steps 3, 4 and 5. The first action (Step 3) takes place between 15 August and 30 September in the example. The reports control officer of the command checks the schedules for accuracy and feasibility and to determine whether reports have been selected for review, for which feeder reports have been initiated by the command. If this is the case, a sample of preparing agencies for the feeder reports is selected and added to the sample chosen by DA. The date for return and heading of a report evaluation questionnaire (DA Form 1086) are then filled out for each report involved. These questionnaires are transmitted to the selected preparing agencies in monthly increments so as to arrive by the first day of each review month (October, November or December as the case may be). Three separate transmissions are made during the quarter, rather than one, in order to spread the workload at installation level and assure field evaluation of each report as near as possible to the time of DA discussion of the report.

The questionnaires are designed to obtain "yes" and "no" answers, with explanations when necessary, to such questions as:

Does the report serve a useful purpose to you?

Are the definitions and instructions clear?

Do you prepare reports which duplicate or overlap this one?

Is sufficient time allowed for orderly preparation?

How many manhours are required to prepare the report and maintain the records pertaining thereto?

Suggestions for improvements are specifically encouraged.

The preparing agency which may be an installation or a headquarters staff agency, completes the questionnaire, and returns it, normally within ten days after receipt, to the reports control officer of the major command. The reports control officer of the major command analyzes the completed question-

naires upon receipt to see that comments are valid, adequate and complete. He studies, particularly, the comments of various preparing agencies pertaining to the same report and seeks clarification or reconciliation where inconsistencies appear. He discusses the comments on questionnaires from installations with the appropriate headquarters staff sections and determines with them any corrective action necessary at that level. Finally he adds the appropriate comment and recommendation of that headquarters and transmits the questionnaire to the reports control officer of the DA initiating agency.

Chart 5 (not inclosed), DA Analysis and Corrective Action, shows the final steps in the operation. The reports control officer of the initiating agency analyzes the completed questionnaires and discusses the preparing agency comments with the initiating branch, that is, the specific person or persons within the initiating agency who actually use the report. He determines through interview and examination how the report is processed and utilized by the initiating branch. He records on a Check Sheet answers to questions concerning the essentiality of the report, its coverage, the procedures for checking and summarizing it, and the actions taken or decisions reached on the basis of it. Combining the results of this inquiry and the analysis of the completed questionnaire submitted by preparing agencies, the reports control officer in collaboration with report initiating branch, decides whether to continue the report without change, to revise it, or to rescind it. When the corrective action is agreed upon, a target date is established to put it into effect. Such review decisions are formalized in a Status Report (DA Form 1087), which is submitted to

To speed training, create uniformity in testing, and free experienced inspectors from training tasks, the Gray Manufacturing Company, Hartford, Conn., uses a recording on its own Audiograph to tell inspector-trainee how to do the job. She can slow the recording, stop it, have instruction repeated.

PRAD, by 20 January in our example. PRAD reviews and analyzes the Status Report to determine the rate of progress in completing reviews, the types of review decisions reached, and the reasonableness of the target dates set for accomplishing corrective action. PRAD spot checks the review decisions with the reports control officers of the initiating agencies concerned. Later there is a follow-up by PRAD to see that corrective actions are initiated.

What has the review accomplished? The results for the CY 1954 are shown in Chart 6.

On 1 January 1954 there were 967 recurring reports under the immediate jurisdiction of PRAD. As provided by the procedure, 233 of these reports were excepted from review during the first year largely because they had recently been reviewed or were already in process of revision. This left 734 reports to be reviewed during the year. Review was actually initiated on 670 reports, leaving 64 on which review had not been initiated by the year's end.

Of the 670 reports for which review was initiated, 570 were completed while 100 were still in process on 31 December 1954. The 570 review decisions were as follows: 340 reports determined to be satisfactory without change, 179 to be revised and 51 to be rescinded.

The results for CY 1954, by initiating agency, are shown on Chart 7. The agencies separately identified are those which accounted for approximately 85% of the reports reviewed. The right hand side of the chart, Status of Reviews Initiated, shows the number of reviews completed during the year and the number in process at the year's end, for each initiating agency.

Dep Log, by far the largest report-initiating agency, initiated reviews on 158 reports; 93 of these were completed and 65 were still pending a review decision on 31 December 1954.

The relative results of the completed reviews are shown on the left hand side of the chart which indicates the percentage of reports considered satisfactory without change, the percentage to be revised and the percentage to be rescinded.

For most of the agencies, decisions to revise or rescind comprise a sizeable proportion of the total. The meaning of a rescission is clear and specific, but the nature of the revisions varies widely from relatively minor ones such as adjustments in due dates or frequency to complete overhaul of a report. Most of those shown fall somewhere in between and represent a combination of steps such as clarifying or specifying definitions, re-scheduling to eliminate overtime, eliminating of unnecessary detail, adding or changing items to make the report more useful at lower echelons, eliminating negative reports, redesigning report forms or formats to simplify preparation, or bringing report directives up to date. That such a substantial share of the reports require corrective action should not be considered astonishing. The Army is undergoing continual change in operation, emphasis and organization and most of these changes require corresponding adjustments in reporting. The number of reports indicated as requiring revision merely indicates the need for continual and increased vigilance to insure that report requirements are kept both current and minimized.

Let us take the Office Chief of Finance as an example. As shown on this last chart the Chief of Finance initiated 56 reviews during the year and completed 52. Of these fifty per cent or 26 reports were considered satisfactory, thirty-three per cent or 17 reports required revision and 17 percent or nine reports were to be rescinded.

The seventeen reports requiring revision involve the following:

- reduction of frequency—3
- clarifying instructions—10
- better scheduling—3
- bringing directives up to date—3
- redesignating preparing agencies—7
- restating the purpose in order to achieve better understanding—6

The total of these adds to more than 17 since a single report will involve several of these items.

With respect to the nine reports "to be rescinded," the following are examples:

A report concerning Civilian

Payroll Certifying Officers had become obsolete and no justification remained for its continuation.

A report concerning Foreign Currency which was required by the Treasury was discontinued but action to rescind this report or a separate Army report based on the Treasury requirement, was not initiated until review action uncovered the situation; a cumulative report on Foreign Currency Disbursements was rescinded when review indicated that the accounts covered by the report had been closed, and the report being rendered was merely a repetition of the last or final report.

A by-product of the review was the discovery and elimination of an unapproved report which had been added to the requirement for an approved report. The Chief of Finance had been preparing a monthly report on Guarantee of Loans under section 301 of the Defense Production Act. Review of this report disclosed that an unauthorized weekly report was also being prepared and distributed to one of the Assistant Secretaries of Defense, the Under Secretary of the Army and the Comptroller. This weekly report could not be justified and has since been rescinded.

Income Tax Bill Brings More Cash For Service Retirees

Retired servicemen under 65 years of age will receive an annual tax windfall under the provisions of the newly-authorized income tax bill.

With respect to "retirement income," retired persons are allowed a credit of \$1,200 each year.

But the amount is reduced by any pension or annuities received under Social Security or Railroad Retirement, and by any pensions or annuities which are otherwise excludable from gross incomes.

Also, when the retired man or woman takes a civilian job, any amount over \$900 which he or she earns further reduces the \$1,200 "retirement income," upon which the full tax credit is allowed.

The majority of retired people in this age category will benefit with an average annual profit of \$250.

To summarize briefly: The reports improvement program of the Army operates primarily through a decentralized review designed to get a report evaluation at least once a year from both the initiating and preparing agencies. In the first year since its initiating, this Periodic Review of Reports has put some reports on a firmer foundation, effected the improvement of others, and eliminated a number which could not be justified. It has created an awareness of the continuing need for reports improvement, enabling the reports control officers in DA staff agencies and in the Armies to do a more effective job.

ASSURE

proper installation of new reports

ELIMINATE

reports no longer essential

MODIFY

reports and directives to meet changed conditions

MAKE

essential reports more useful and less burdensome at all echelons

IMPROVE

reporting techniques, procedures, forms and directives

COLONEL ACTIVE IN SEATTLE COMMUNITY AFFAIRS

One of the most active officers in community affairs in the Seattle King-County area is Colonel E. Jeff Barnette, Port Commander of the Army Transportation Corps' Seattle Port of Embarkation.

Since becoming Port Commander on 1 September 1954, Colonel Barnette has been appointed to various positions in community and national organizations. These include:

Vice president, Seattle Federal Business Association.

Member of Board of Directors of King County Chapter, American Red Cross.

Member of Radio Station KIRO (50,000 watt CBS outlet) Advisory.

Member of City of Seattle Mayor's Maritime Advisory Committee.

"Lt. General" in charge of all Army installations in Seattle King-County area participating in the United Good Neighbors drive for 1955.



Special Equipment Problems are our specialty

Since the beginning of World War I, Gar Wood has produced thousands of specialized equipment items for all branches of the armed forces, and for all types of military applications.

Similarly, this company has served many thousands of civilian users, both at home and overseas. In fact, today Gar Wood is recognized as the world's largest manufacturer of hydraulic hoists, dump bodies, winches, and cranes—in addition to being a leading supplier of excavators, ditchers, spreaders and other types of construction machinery.

From this long and varied engineering and manufacturing experience, Gar Wood is well prepared to meet any military equipment problem that comes along—whether it be an entirely new piece of equipment, or a new version of a standard item.

Our engineers will be glad to work with you on design problems. Five great plants are ready to produce pilot models of special equipment for military testing. We invite your specifications.

GW-M-2



GAR WOOD INDUSTRIES, Inc.
Wayne, Mich. • Richmond, Calif.

World's Largest Producer of Truck Equipment

For more facts request No. 35 on reply card

Conservation through Suggestions

Navy Regional Accounts office, New Orleans, Louisiana. Philip L. Schuler, civilian employee, recently received a \$200 Navy Incentive Award from Rear Admiral John M. Higgins, 8th Naval District Commander.

Camp Stewart, Tennessee. Brigadier General Richard W. Mayo, USA, Commanding General, presented a letter of commendation recently to Major William F. Groves, Transportation Officer, for his suggestion on how to reduce the cost of repairing wornout wooden body floors on Army ½-ton pickup trucks. By covering the bed with a galvanized iron sheet which will last for the life of the vehicle at a cost of approximately \$15, the yearly replacement of wooden decking at a cost of about \$33 could be saved. The Department of the Army has advised that the suggestion is being adopted throughout the Army.

Pacific Intermountain Express Company. P-I-E estimates that at least one man-hour per trailer on routine service checks is saved by a mobile unit made from Army surplus mounting a compressor, air tank, grease tank, tire rack, ladder, a hose for greasing, one for inflating tires and another for pneumatic tools. Routine service functions formerly done in a shop can now be performed while the trailer is being loaded.

Wright-Patterson Air Force Base, Dayton, Ohio. An experimental pipeline system for moving Air Force fuel which was installed over two years ago at Smoky Hill Air Force Base and McConnell Air Force Base, have reduced transportation costs approximately \$500,000 annually. At present, largely dependent upon shipments by rail and truck, the Air Force hopes to establish these multipurpose fuel

lines in a chain like fashion throughout the country.

U. S. Naval Supply Depot, Scotia, New York. A new procedure for refueling all materials handling equipment netted \$140 to Anthony Marotta and Stanley McKay in a recent ceremony presenting suggestion awards.

Department of the Army. Estimated savings of more than \$20 million over a one-year period will result from suggestions made by Army civilian and military employees during fiscal year 1955. A total of 61,669 recommendations were received and 15,021 were adopted at installations in this country and abroad. The total sum of \$332,956 was paid out for these suggestions which to ARMED FORCES MANAGEMENT looks like a real saving.

Robins Air Force Base, Georgia. The Warner Robins Air Materiel Area report a savings to the taxpayer of more than two million dollars over the past five years through an intensive Records Management Program. The savings for fiscal year 1955, alone, exceeded a half-million. Mrs. Essie Anderson, Records Management Officer, is responsible for administering the successful program.

Medical Research Center, Great Lakes, Illinois. Captain H. K. Sessions, USN, Commanding Officer, recently presented Mrs. Marcia Freeby with a commendation and a check for \$300 for her efforts in isolating a pleuro-pneumonia virus, which caused an epidemic at the Naval Training Center last winter.

Badger Ordnance Depot, Baraboo, Wisconsin. Rounding out a year of participation in the awards program, 8 employees were recently awarded checks. Top winner

Robert Waffenschmidt, received \$115 for his suggestion improving maintenance procedures in the Solvent Recovery area.

Hamilton Watch Company, Lancaster, Pennsylvania. Richard K. Hershey (East Pete), raised his earnings in the suggestion field to \$305 and became the first four-time suggestion winner at the plant. Hamilton Watch Company who has long encouraged employee participation in suggestion awards has a long list of "savings" which have been incorporated into the organization.

Presidio of San Francisco, California. A suggestion for a new running gear for a universal handling dolly netted Mr. Dan Dougherty \$100 recently (his fifth award) in ceremonies presenting awards to three employees.

Headquarters Third Army, Fort McPherson, Georgia. Economy measures during fiscal year 1955 resulted in a savings of \$11,013,486 during the past 12-month period. One of the largest single items reported was \$2,555,092 effected by a reduction in civilian personnel. More than a million was saved by taking advantage of lower rates for in-transit freight. Additional savings were reported in meat cutting, consolidation of shipments, better laundry utilization and ration issues.

Air Materiel Command, Wright-Patterson Air Force Base, Ohio. Efficient and practical packaging is paying big dividends. Colonel Robert L. Mason, Chief, Air Materiel Command Packaging Division, reports that during the business year ending June 30, 1955, packaging costs were reduced approximately \$5-million. Accomplishment is credited to AMC's strict conservation of money, manpower, and materials in the preservation of millions of pieces of equipment and spare parts.

Utah General Depot, Ogden, Utah. Cash awards totaling \$775 were approved recently for seven improvement-minded employees whose suggestions will result in annual savings of approximately \$15,000 to the Government. Top

ARMED FORCES MANAGEMENT

award went to Miss Cleo Wadman, Transportation Division, who received \$200.

Thompson Products Incorporated, Cleveland, Ohio. A woman's knack for using nail polish to patch up almost anything netted a Cleveland aircraft worker a \$6,592 award.

Mrs. Emmie Gabor, an employee of Thompson Products Inc., polished jet engine blades but would have to change a tiny belt on the machine 50 to 60 times a day, because the belt kept breaking.

Thompson engineers were stumped by the problem and still were trying to solve it when Mrs. Gabor decided to tackle it herself. She recalled patching holes in her stockings with nail polish.

The belt also would fray at the edges before breaking. She simply applied a coating of nail polish to the belt edge and surprised the engineers with the result.

Her innovation saved the company nearly \$50,000 during the first year it was used. The company awarded her the largest sum it had ever paid for an employee's suggestion.

475th Fighter Group, Minneapolis-St. Paul Air Force Base, Minn. A new rocket remover that will save the 475th over \$4 million annually has been designed by T/Sgt. James M. Skaja of the 432D Fighter Interceptor Squadron. The new tool, which took Sergeant Skaja a week to design, is much safer to use and prevents damage to the fuze which was almost inevitable with the old equipment.

Seattle Port of Embarkation, Seattle, Washington. A new approach to the suggestion program is a target set for the year. Lt. Col. John B. Welsh, Chief, Cargo Traffic Division has established a quota and states his Division will attempt to save the government \$384,000 during the current fiscal year. The goal established is a minimum of one suggestion per employee.

Naval Air Station, Alameda, California. Captain L. E. French, USN, Commanding Officer, recently presented two healthy checks for money-saving ideas. Perry Cameron, received \$300 for his idea of pooling government quarters furniture which had a one-time

savings value of \$150,000. Kenneth R. Volkmann received \$237 for his beneficial suggestion pertaining to mockup installation for ground check of jet engines which is estimated to save \$12,000.

Rhine Engineer Depot, U. S. Army, APO 227, New York. Employee Suggestion and Work Simplification Programs which have been in effect at the Rhine Engineer Depot for over three years, have shown a steady increase in the war to save taxpayer-dollars. Each year, more suggestions and more awards have resulted in better management. During the first six months of 1955, 140 suggestions have been accepted. Recent winners were Mr. Kasimer Jurksas, a German civilian employee, who perfected and designed a pipe bender, and Corporal Harlow Baumgartner, Fort Wayne, Indiana, who took the guess-work out of setting automatic cylinder block honing machines with a new universal mirror.

Smoky Hill Air Force Base, Salina, Kansas. This management-conscious organization was recently notified from Strategic Air

Command Headquarters that they had won the Air Force-wide prize with the highest participation in the Air Force Civilian Incentive Award's Program for the month of July. The Base committee headed by Major William H. Nicols, USAF, received a letter of appreciation from Base Commander Colonel Jack L. Randolph, USAF.

Fort Dix, New Jersey. Brig. General Robert W. Ward, Commanding General, presented Sgt. William O. Hambrecht, with a check for \$25 and his personal congratulations for the Sergeant's suggestion which will save the government an estimated \$5000 per year. The 23-year-old veteran of six years Army service became the first soldier at Fort Dix to receive a cash award under the new incentive awards policy, by designing a motor-driven bore brush used in cleaning the chamber of 57mm recoilless rifle. To date, suggestions at Fort Dix this year have saved \$36,000.

Have you renewed
your subscription?



Three types of Army Incentive Awards were represented by these San Francisco Port of Embarkation and San Francisco Oversea Supply Agency civilian employees being congratulated by Brig. Gen. W. J. Dayo, Jr., Port Commander. Left to right are General Dayo; Mrs. Margaret Narducci, Oversea Supply Agency, \$140.00 suggestion award; Mrs. Gladys Crabb, Oversea Supply Agency, Sustained Superior Performance Award; Mrs. Elaine Buyvoets, Post Fort Mason, Meritorious Civilian Service Award; Mrs. Gladys Thompson, Port Adjutant General Division, \$105.00 suggestion award; Mrs. Delores Fisher, Port Comptroller, Meritorious Civilian Service Award; John J. Kunz, Port Adjutant General Division, Sustained Superior Performance Award.—U. S. Army photo by Henry Helms.

PRODUCTS

designed to deflate production Costs

As a service to OPERATING DEPARTMENTS and PURCHASING OFFICERS, ARMED FORCES MANAGEMENT will provide you with a selected list of manufacturers' products.

A Products Information Library has been established and descriptive literature, catalogues, and reference material is available to you without cost or obligation. The firms have been carefully selected, have a high standing in their respective line, and deserve consideration. They are NOT, in each case, advertisers in ARMED FORCES MANAGEMENT, but each offers you a service or product which we feel will be helpful in your operation. Operating and Purchasing departments are respectfully urged to take advantage of this service.

How to Use Armed Forces Management's Library—

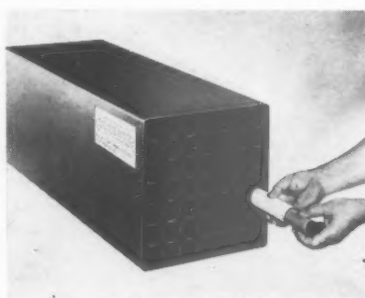
Inserted in this issue, a postage free card is provided for your convenience in requesting descriptive and informative literature. This will be forwarded to you, without obligation. Many cost saving ideas are generated by Operating Departments that have referenced information on products available. Purchasing Officials will find this type of information invaluable. All that need be done is: fill in name and address, circle that which will assist you, and drop in the mail.

C & H SUPPLY COMPANY.

The best in aluminum nameplates, according to independent laboratory tests, has been developed by this California firm. Called Metal-Cals, they are of anodized, etched aluminum which gives them superior long life, economy, wearability and ease of application. As permanent as base aluminum itself, Metal-Cals have no inks, paint, lacquers or superficial coatings to wear, chip, or crack off, are as abrasive resistant as the jewels in fine watch movements. Backed by a pressure-sensitive adhesive, they will adhere to any smooth, cohesive surface, including metals, porcelain, bakelite, polystyrene, glass, plastics, wood, paints or enamels.

For more facts request No. 1 on reply card

ROLL AND FILE SYSTEMS, INCORPORATED. (See cut). The new Multiroll File unit containing 49 individual tubes of 1 3/4" diameter or the 25 tube size with 2 1/2" diameter encased in a 200 lb.-test reinforced corrugated board container, has recently been intro-



duced to industry and the Armed Forces. It is now possible to file large lay-outs and tracings using this time-proven "mailing tube method" and yet have the material readily available with an index system. Three models, providing tube lengths of 30, 36 and 42 inches, are currently in production. This inexpensive new filing system not only saves time but, complete with an index, is a valuable asset to most installations with a common problem of the storage of this type equipment. Complete information, drawings and prices will be forwarded upon request.

For more facts request No. 2 on reply card

LIQUID PLASTICS CORPORATION. A new brochure on Plastispray, the sprayed-on vinyl plastic sheeting which has been featured in news and editorial commentary in over fifty publications this year, has just been released. Here is your opportunity without obligation to secure this valuable information designed to show many dollar-saving applications. Available in various colors, textures and sheen, Plastispray is noted for its suitability to site application.

For more facts request No. 3 on reply card

THE FRANK G. HOUGH COMPANY. Thoroughly tested in military use, the TU-120, a new four-wheel drive "Payloador" Tractor, has proven to be a versatile piece of equipment in airport, dock, plant and pier application. With a 12,000 lb. drawbar pull, torque-converter drive, power steering and 4-speed full-reversing transmission, this 83 h.p. workhorse is at home on the biggest job. Full information on this versatile tractor will convince you that maximum utilization makes several vehicles surplus to your requirements.

For more facts request No. 4 on reply card

AKRON PAINT AND VARNISH COMPANY. Here at last is a glossy-black rubber paint to dress up those tires and rubber mats for command inspections. This concentrated product is reduced with 8 parts of gasoline or rubber solvent, dries quickly and protects as well as beautifies your vehicles. Information is available on this new paint designed to make your vehicles catch the inspecting eye.

For more facts request No. 5 on reply card

AMERICAN STEEL AND WIRE (United States Steel Corporation). Of particular interest to Post, Base and Installation Engineers, is a new informative booklet filled with photographs, drawings, descriptions and specifications of different styles of fence and grates for the protection of property. USS CYCLONE FENCE insures maximum security at a fraction of property-acquisition cost. This reference booklet, prepared for your convenience, will illustrate all applications.

For more facts request No. 6 on reply card

ARMED FORCES MANAGEMENT

MAGNETIC RESEARCH CORPORATION. Voltage regulation precision of plus or minus 0.25% with loads varying from 0.3 to 3 KVA is the exceptional performance offered by the new Stabvolt magnetic AC line voltage regulators produced by Magnetic Research Corporation. Output voltage is stabilized within a band of 0.25V RMS for line voltage variations from 100 to 130V and line frequency variations from 57 to 63 cps. Control of voltage output is continuously adjustable between 110 and 120V RMS.

For more facts request No. 7 on reply card

BINKS MANUFACTURING COMPANY. Specifications and details on many new models in the Binks line of spray painting equipment are presented in a handy vest-pocket catalog. Excellent as a reference on standard and special spray guns, fluid tanks, underbody coating pump outfits, oil and water extractors, spray painting outfits, portable and stationary air compressors, dry type floor and auto spray painting booths and accessories. Catalog No. AD-125 is available to military installations.

For more facts request No. 8 on reply card

CARBIDE AND CARBON CHEMICALS COMPANY. (Union Carbide & Carbon Corp.) A new acid-resistant uniform, on trial for over a year at the Army's Picatinny Arsenal, has successfully passed all tests. Made of 100% Dynel, Union Carbide's latest science fiber, the new uniforms have gone a long way toward raising worker morale in areas where acid is present. In addition to the safety factor which reduces burns, the new uniforms have proven to save many dollars in uniform replacements.

For more facts request No. 9 on reply card

THE EBCO MANUFACTURING COMPANY. Would you like to cut your coffee-break time in half? The new OASIS Hot 'n Cold Water Cooler, can save many hours in your installation and will be enjoyed by all employees. Dispensing both hot and cold water, coffee-making becomes a simple time-saving operation which under management studies has shown an increase in organization efficiency. Information on this equipment

comparable in cost to most water-coolers, is available upon request.

For more facts request No. 10 on reply card

MAINTENANCE ENGINEERING COMPANY. (See cut.) MECO "Black Knight" Surface Sealer, a pitch emulsion that is insoluble in oils and gasoline, can be quickly applied, and improves and protects the surface of blacktop paving, has recently been developed by the



Maintenance Engineering Company. Available from stock in three colors—charcoal, green and red—this product which prevents softening and disintegration of bituminous concrete, can beautify as well as protect. Tested and accepted by the Air Force and government branches, for it complies with federal specifications, it can be applied quickly and simply by machine or manually by brush producing a fast-drying seller for cracking, heaving and breaks due to water penetration.

For more facts request No. 11 on reply card

LEWYT MANUFACTURING CORPORATION. Management-conscious readers will want a new 34-page book of Defense Case histories, describing fully case histories in military production from the problem through the solution, which can be yours without charge by requesting it on our product card.

For more facts request No. 12 on reply card

VICTOR ADDING MACHINE COMPANY. This time-honored manufacturer of business systems and machines, electronic equipment and cash registers, has recently announced the new Victor Calculator, with exclusive features of fully automatic multiplication from one simple set of keys. The new total transfer button which lets you retain a total in the machine so that it can be multiplied

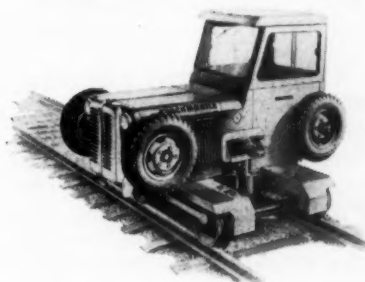
with another figure, and the simplified automatic constant lever for easy multiplication, makes this new machine a "must" for your organization. Information is available for you to compare this new equipment which after reading we know your next machine will be a VICTOR.

For more facts request No. 13 on reply card

THE ALPHA MOLYKOTE CORPORATION. Bulletin 103A, a four page, two-color catalog of lubricants complete with a selector chart with temperature ranges, has recently been completed and is available to interested military installations.

For more facts request No. 14 on reply card

THE WHITING CORPORATION. (See cut.) More than three hundred executives gathered in Chicago last month to see the first public demonstration of the new heavy-duty TRACKMOBILE that hauls, switches and spots railway



cars, and is truly a multi-purpose vehicle. Operating on both road and track with a conversion time of only 90 seconds, it is powered by a V-8 industrial engine with tractor-type suspension and develops a draw-bar pull much greater than its own weight. Designed and built with all controls including positioning, raising and lowering the automotive type wheels are located in the cab, this economical and maintenance free vehicle is an entirely new concept in low-cost rail hauling and switching. Complete information is available.

For more facts request No. 15 on reply card

DRAYER-HANSON INCORPORATED. This leading manufacturer of air conditioning and refrigeration equipment have added the following installations to their military purchasers of equipment.

NAS Jacksonville, Abilene AFB, Laughlin AFB, James Connally AFB, Walker AFB, Yuma County AB, Edwards AFB, Castle AFB and many others. Your organization, too, can be prepared for next season's heat, but request quotations and available literature from our library.

For more facts request No. 16 on reply card

AMERICAN BOSCH ARMA CORPORATION. A subminiature gyro compass less than 2% the size but as accurate and more rugged than its large predecessors has been announced by ARMA. Weighing but 22 pounds, including the control unit, the complete instrument is contained in a 10½" cube and has been designed with standardized parts readily replaceable that can be installed without recalibrating or readjusting the compass. Concurrent with airborne tests are installations in tanks and other equipment heretofore unable to accommodate larger units. Complete information is available.

For more facts request No. 17 on reply card

WORLD RADIO LABORATORIES. The new 1956 catalog No. 16 complete with valuable information on radio, television, electronics and high-fidelity, is now available to you. This leading manufacturer and jobber is known as "The World's Most Personalized Radio Supply House."

For more facts request No. 18 on reply card

WAYNE MANUFACTURING COMPANY. A new nylon gutter broom for all types of sweepers, thus eliminating the pieces of steel gutter broom wire which breaks off the standard gutter brooms and are sometimes picked up by jet engines on aircraft runways, has recently been developed. Designed to wear four times the life of steel brooms, they are fast becoming the only acceptable type in service at air bases all over the world.

For more facts request No. 19 on reply card

TALK-A-PHONE COMPANY. A revolutionary new automation inter-communication system providing two-way "private" conversation between stations without the use of any controls at either station during conversation, was introduced last month by this or-



JOSEPH MASSAGLIA, JR., President

Hotel MIRAMAR and Bungalows
SANTA MONICA, California

California's World-famous Resort—250 rooms
WILLIAM W. DONNELLY, Manager

Hotel SENATOR
SACRAMENTO, Calif.

The Capital's Premier Hotel—400 rooms
CHARLES W. COLE, Manager

Hotel EL RANCHO & Bungalows
GALLUP, New Mexico

World's Largest Ranch House—200 rooms,
MARTIN L. HANKS, Manager

Hotel PARK LANE
DENVER, COLORADO

Magnificent Rocky Mountain View—400 rooms
CHARLES W. COLE, Manager

Hotel RALEIGH
WASHINGTON, D. C.

On Famous Pennsylvania Ave.—500 rooms
JOHN F. SCHLOTTERBECK, Manager

Hotel BOND
HARTFORD, Connecticut

Hartford's Finest—400 rooms
GRIFFITH R. DAVIES, Manager

Hotel SINTON
CINCINNATI, Ohio

Hospitality at its Best—700 rooms
JOHN SCHEIBLY, Manager

Hotel SHERWYN
PITTSBURGH, Pennsylvania

Center of Everything—400 rooms
MURREL F. VAUGHN, Manager

World-famed hotels—
Teletype service—Family Plan

ganization. Operated automatically by your own voice, it is available in ten-station capacity (Model ACS-7110) and twenty-station (Model ACS-7120) units at greatly reduced prices. Complete information will be sent without charge to interested installations.

For more facts request No. 20 on reply card

BROWNING ARMS COMPANY. Have you seen the new Browning selection of three shot-guns? For over three generations Browning have been noted for their excellence in manufacturing fine guns. Descriptive information is available to our readers with an interest in good shooting.

For more facts request No. 21 on reply card

SWITZER BROTHERS, INCORPORATED. Supplies the Armed Services with daylight fluorescent paints, fabrics and other high-visibility color materials as well as finished articles in the vivid Day-Flo colors. These are many times brighter and purer than or-

dinary colors, and thus facilitate identification, safety, signaling and similar operations in which long-distance or instant color recognition is a critical military factor. Suppliers of materials used as paulins, flags, air-ground recognition panels, channel buoys, tow targets and guided missiles, Switzer also supplies decals, phosphorescent tape, black lights and other luminous combat and training aids. Color charts and descriptive information is available.

For more facts request No. 22 on reply card

COPEASE CORPORATION. A new, compact, lightweight (12½ lbs.) portable unit which exposes clear, permanent copies of almost any type of written or printed material, has recently been announced. This new addition to the COPEASE line fits into a briefcase, operates on either AC or DC current, has a 9½" by 14¾" copying surface, and can be used efficiently to reproduce records or reports which cannot be removed from location. Priced at \$79.50, we are confident you will want additional information available from our library.

For more facts request No. 23 on reply card

WHEELER PROTECTIVE APPAREL. A new lightweight arm protector (Catalog No. 52290) has been introduced by Wheeler made of wire mesh construction which



allows free movement of air through to the arm of the wearer, yet also affords protection against flying objects, abrasion, and cutting by metal or glass sheets. Completely adjustable and available in either monel or electro-galvanized steel wire cloth, the protector can be sterilized and has proven popular where danger of arm injury is present.

For more facts request No. 24 on reply card

ARMED FORCES MANAGEMENT

ALL-STATE WELDING ALLOYS COMPANY. A new pocket size handy book, 32 pages, is available without obligation which condenses into ready reference form the considerable data needed by buyers of specialty alloys and fluxes to help them make the wisest choice for their application.

For more facts request No. 25 on reply card

KNOMARK MANUFACTURING COMPANY. Something new for military personnel is the "Esquire Shoe Valet Delux" priced near \$5 and certain to be a popular Christmas gift. The new valet is a closed box with hinged cover on which is mounted a foot rest and containing 2 shoe brushes, 2 shoe daubers, 2 shine cloths, 4 cans of Esquire Boot Polish and a can of Esquire Saddle Soap. Compact in size and a necessity for every serviceman, information is available as to prices and purchasing directory.

For more facts request No. 26 on reply card

DICTAPHONE CORPORATION. A specialized military department within the Dictaphone Corporation is available to assist each installation within the Armed Forces with dictating and recording problems. Inquiries such as an Army Air Base, desiring to record radio communications, a Navy Shore Police Installation desiring a Dictacord and an Air Force Base saving dollars with a multiple dictation installation, have made such a department necessary. Long-noted for their service organization located throughout the world, an inquiry from you on our product card, will show you efficient management with Dictaphone installation.

For more facts request No. 27 on reply card

CANADIAN AVIATION ELECTRONICS. Another new product with essential military application is SARAH, a search and rescue homing device weighing less than four pounds. The "Sarah" system provides positive location regardless of conditions. The beacon consists of a portable transmitter/receiver with a self-contained power unit. It transmits a continual homing signal 66 miles in all directions with angular accuracy down to a range of a few feet, and provides two-way voice communication for

directing operations. Complete with antenna and ruggedly built, this waterproof unit will fit into a normal pocket.

For more facts request No. 28 on reply card

FEDERAL SIGN AND SIGNAL CORP. The Federal Beacon Ray light flashes a bright red light through a full arc of 360 degrees, warns while moving as well as parked. Military subdivisions using it have set new safety records.

For more facts request No. 29 on reply card

GRAPHIC SYSTEMS. This New York firm invites men interested in efficient management to get things done with their Boardmaster Visual control which gives a graphic picture of your operations, spotlighted in color, preventing errors, saving time and money.

For more facts request No. 30 on reply card

CLARK EQUIPMENT COMPANY, Industrial Truck Division. The Clark Company lists 81 reasons why it is better to buy genuine Clark parts from your local Clark dealer. You get a complete service package, mobile service for emergencies, preventative maintenance at your plant. Your Clark dealer's inventory of quality parts is based on machine population, handled by trained mechanics. . .

For more facts request No. 31 on reply card

THE GEORGE W. BORG CORPORATION, Borg Equipment Division. This firm offers 48 models of potentiometers including their well-known 900 and 1100 series micropots, all models with a precision reputation for accuracy, dependability, and long life. Complete information is carried in catalog number BED-A15B.

For more facts request No. 32 on reply card

LITHIUM CORPORATION OF AMERICA, INC. Lithium, key chemical in the future of our nation's defense is used for propellants, new high temperature alloys, cermets, and chemical processes to mention just a few.

For more facts request No. 33 on reply card

LESTER B. KNIGHT & ASSOCIATES, INC. Experienced management Counsel and specialized services to Armed Forces Management is offered by Knight engineers. If your operation will benefit by highly specialized skills in financial management, paperwork man-

agement, management controls, or plant engineering, a Knight representative will call upon your inquiry.

For more facts request No. 34 on reply card

GAR WOOD INDUSTRIES, INC. The world's largest producer of truck equipment makes special equipment problems their specialty. The company has produced thousands of specialized equipment items for all branches of the Armed Forces and for all types of military applications.

For more facts request No. 35 on reply card

EQUIPTO DIVISION OF AURORA EQUIPMENT COMPANY—Manufacturers of factory and shop equipment for the past forty years, Equipto will send their free, illustrated catalogue, covering a wide variety of products, to interested Defense personnel.

For more facts request No. 36 on reply card

BROWN, MADEIRA, AND COMPANY. This company, specializing in mutual investment funds, discloses how you can get the investment facts about mutual funds. They will send, without obligation, information concerning conservative, middle-of-the-road, and aggressive types of investments.

For more facts request No. 37 on reply card

Borg-Warner Planning Multi-Million Research Center

Plans for the construction in Des Plaines, Ill., of a multi-million-dollar Borg-Warner Research Center—conceived as one of the most highly diversified establishments for technological advancement in the country—were announced by Roy C. Ingersoll, President of Borg-Warner Corp.

Pointing out that this will be a multi-purpose scientific and engineering operation, Mr. Ingersoll said that the new laboratory will contain facilities for metallurgical, electronic, electrical, chemical, acoustical, hydraulic, applied mechanical, physics and nuclear research. The laboratory also will house a complete machine and model shop, a modern computation center and a large technical reference library. About 100 scientists and engineers will be engaged at the start of the operation. Building of the initial unit is expected to be completed next spring.

Yards and Docks Supply

The Yards and Docks segment of the Navy Supply System, as well as other inventory managers, employs these principles in the control and distribution of Navy material. YDSO, like other Navy supply offices, controls inventories in two ways: the first is item control of inventories at the wholesale level. Once each three months, wholesalers report the status of inventory that is under YDSO's control. This report is in the form of punched cards and includes four quantitative elements of information for each item reported: 1) issues (excluding one-time non-recurring demands), 2) reservations for future issue (based on customer requests), 3) on-hand inventory, and 4) shipments due in. Based on an inventory analysis of these and other factors—such as trend, purchase lead time, change in equipment population, and others—the inventory manager determines requirements and replenishes from other available Navy stocks or buys additional material.

The second method of control is an indirect one. This is accomplished through financial inventory reports submitted quarterly by each stock point (wholesale and retail) carrying Navy inventory. From an analysis of these reports, the inventory control office can determine the over-all inventory position in relation to receipts and sales. This analysis, and a control over funds for purchase of additional stocks, provides the basis on which control is exercised over stocks at the retail-consumer level. The inventory control office does not perform item control for retail inventories.

Our distribution system, while similar to those for other commodity groups, has certain unique characteristics that have led to development of specific management principles. For that reason, a description of the Yards and Docks Supply System may be helpful in understanding these principles.

The Yards and Docks Supply Office purchases, distributes, and performs item control for material stored at nineteen (19) wholesale

stock points. These consist of two distribution points at the Oakland and Norfolk supply centers, and eight primary stock points in the continental United States; four primary stock points at bases in the Pacific, and five mobilization reserve stock points in this country. The twelve primary stock (wholesalers) and two distribution points (thus named as they supply primary stock points at Pacific bases as well as ships and retail outlets in their continental area) constitute the "wholesalers" of our distribution system for regular day-to-day operating requirements. The mobilization reserve stock points carry wholesale stocks of material and repair parts for mobilization use and to furnish initial stock to mobile construction battalions, Marine aviation units, and other shore-based units when they are deployed outside the United States.

In addition, we have 160 retail outlets at Navy shore bases and smaller retail stocks on ships (such as aircraft carriers) using our material. The bases and ships are our "consumers." In fiscal year 1955, "sales" are running at a \$14 million annual rate with a current inventory of just over \$88 million. Of this total, over half is held as a mobilization reserve. Of the remainder, inventories of some items, reflecting the Korean buildup, exceed current operating requirements. However, computing all costs of maintaining this inventory, including interest on investment, it is less expensive to hold this material than dispose of it. However, \$80 million of obsolete and excess material left over from World War II has been cleaned out of the system since June 30, 1953, when inventories stood at \$149 million. Excesses have been offered to other military and civilian departments with very low utilization, as the majority applied only to overage and obsolete equipment.

The Evolution of Navy Supply

During World War II, the operating forces' concept of supply was "every item in stock at every location," and this concept continued during the post-war period. It soon became apparent that universal stocking of all items resulted in a large build-up of total Navy inventories with resultant low stock turn-

over. Many items had only a small recurring demand and others only an occasional need. A study of the demand experienced for items in several commodity groups showed that roughly 10% of the total items accounted for approximately 90% of the supply business. As items were added to this nucleus, they contributed a proportionately smaller amount to total business. A comprehensive study of our system in 1953 showed that this condition was also true of YDSO operations.

However, our commodity differs from electronics, ordnance, and aeronautical material in that it includes a majority of common commercial items available through commercial distribution systems in normal times. During war, however, commercial supplies are short or completely non-existent. On the other hand, even in peacetime, civilian supply channels do not extend to the far-flung Navy bases on foreign shores. Also, items of military design are not available through normal distribution channels within or without the United States.

In light of these factors, YDSO, jointly with the Bureaus of Supplies and Accounts and Yards and Docks, has developed the following policies to guide the YDSS:

- 1) The YDSS will be operated and maintained to provide essential military readiness at minimum cost.
- 2) A centrally-controlled distribution system with established organization, procedures, experienced personnel, and recorded data will be maintained to provide a nucleus for mobilization.
- 3) Purchase and distribution control will be decentralized and maximum use made of commercial distribution channels except where military considerations or proven economy justify central control and distribution.

Inventory Management Principles

A comprehensive review of the YDSS in the light of these policies has resulted in developing six major management principles that are employed in the control and distri-

bution of our material. These can be summarized as follows:

1. Centralized item inventory control by YDSO is restricted to those "best seller" items on which economies from centralized procurement and distribution can be demonstrated, those items which are not readily available on the commercial market, plus those required in support of mobilization plans.
2. Stock at continental wholesale stock points is restricted to "best seller" items.
3. Stocks of slower moving items which do not meet the "best seller" demand criteria but which are required to be retained under centralized procurement and distribution control because of non-availability on the local commercial market are consolidated at the distribution points - Norfolk and Oakland.
4. YDSO has relinquished item inventory control to consumer activities for a large number of medium and slow-moving commercial items with replenishment of consumer stocks of such items by procurement from local commercial sources. In overseas areas it is recognized that local commercial sources can be unreliable, inadequate or non-existent. Therefore, overseas activities may obtain *all* requirements through established Navy supply channels where support through the local market is not available.
5. Navy Stock Fund financing is granted to consumer activities to buy stock of medium and slow-moving items providing specific recurring demand criteria are met.
6. The responsibility for careful control of stocks and prudent management of allotted stock funds in accordance with established levels of supply and stock turn ratios is placed on consumer activities.

Adoption of these principles required a review of the frequency of demand, unit and dollar sales volume, use and market availability of each item in the Yards and Docks Supply System. Upon com-

pletion of this review, 3,500 items went into the "best seller" group and 9,500 items fell into the slower moving (commercially unavailable) category described as "carrying point" items. Thus, the peacetime system dropped from a centrally controlled total of 125,000 items to 13,000. This limited group of items has constituted 50 to 60% percent of total sales volume. In addition, some 50,000 items were required for various mobilization plans of the Navy.

The 3,500 items in the "best seller" group, the maximum that will eventually be carried by continental wholesalers, compares with an average of 22,000 items carried when this plan went into effect in

*This is less than indicated by demand studies, because tires and tubes, although best sellers (20% of total sales volume), have been excluded from the centrally-controlled group. The reason: volume purchases do not realize the usual savings, as an open-end government contract offers tires at fixed low prices regardless of volume. Use of this contract is mandatory for all government agencies, except for purchases of tremendously large quantities that YDSO operations do not normally require.

New SAFETY RECORD!



FEDERAL BEACON RAY LIGHT

Military subdivisions using the Beacon Ray light on their emergency vehicles have set new safety records for personnel and the public.

ARE YOUR VEHICLES EQUIPPED WITH BEACON RAY?

Crash trucks, fire trucks, ambulances and various patrol cars need the protection of this visual warning that flashes a bright red beam to all points of the compass, through a full arc of 360 degrees. The Beacon Ray warns while moving as well as while parked. Write today for FEDERAL BEACON RAY literature.

FEDERAL SIGN and SIGNAL Corporation

formerly.
Federal
Enterprises,
Inc.

8739 S. State St., Chicago 19, Ill.

For more facts request No. 29 on reply card

July, 1954. The Philadelphia depot, with large war-ending stocks, had 43,000 items. At this writing, the average has dropped to 8,200 items, with Philadelphia reduced to 14,000 items.

Over-all system availability of the best sellers at wholesale level has risen steadily from 83% at the outset of the plan in July 1954 to a recent level of 93%. This is the result of maximum attention to the small group of most important items in the system. Additional demand data can be accumulated; a more thorough analysis and more accurate forecast of future demand can be made for each item with resultant improvement in "responsiveness" of supply to the needs of the Navy's operating forces. Our goal is 96-98% availability from stock on these items.

The reduced number of centrally controlled items has made possible reductions in manpower and space occupied. The best sellers can be

November Anniversaries

United States
Marine Corps

10 November 1775

concentrated in a smaller area and wholesalers can give faster service to their customers. Our goal is to provide the same supply service that industry, stimulated by competition, is able to give. One wholesaler, the Supply Center at Pearl Harbor, has successfully instituted a telephone order system. The complete and final order is placed over the phone; no confirming requisition is issued. Regular one-day delivery is offered and, if requested, material can be furnished in two hours. While not noteworthy for a business enterprise, military officers will appreciate the imaginative thinking and degree of cooperation necessary to accomplish these results. Requirements for accountability of funds, responsibilities of the requisitioning office, and traditional military supply practices are formidable obstacles that must be overcome to install such a system.

A complete range of carrying point items (low demand, commercially-unavailable) will be carried only at the supply centers in Oakland and Norfolk. This reduces the total investment in these low stock turn items but insures greater availability than under the previous system. Before, no one naval depot could be counted on to have the precise item needed. Greater transportation cost and longer transit

Vickers Electric Division, Vickers, Incorporated, has been invited to participate in an Exhibit of Magnetic Defense Equipment sponsored by the Bureau of Ships, Magnetic Defense Section, Code 560M, being held in the lobby of the Main Navy Building, 18th and Constitution Avenue, Washington, D. C., from October 3 through October 28, 1955.

Vickers Electric Division is exhibiting a completely automatic, all magnetic amplifier de-gaussing control system of the GM-2 type which is installed aboard various classes of U.S. and foreign Navy minesweepers. In addition, a completely automatic, all magnetic amplifier control system of the RM-2 type with rheostat manufactured by the Vickers Electric Division will be on display.

MY CREED

By Dean Alfange

I do not choose to be a common man. It is my right to be uncommon—if I can. I seek opportunity—not security. I do not wish to be a kept citizen, humbled and dulled by having the state look after me. I want to take the calculated risk; to dream and to build, to fail and to succeed. I refuse to barter incentive for a dole. I prefer the challenges of life to the guaranteed existence; the thrill of fulfillment to the stale calm of Utopia.

I will not trade freedom for beneficence nor my dignity for a handout. It is my heritage to think and to act for myself, enjoy the benefit of my creation, and to face the world and say, this I have done. All this is what it means to be an American.

Presented during "Operation Youth Conference"
Xavier University 1954

time are more than offset by a sure-fire source and smaller total system inventories and resultant carrying costs. A complete stock of these items has not yet been built up due to inherent procurement difficulties and, consequently, present availability at 78%.

For the balance of items, the consumers in the continental United States buy from their nearest commercial parts vendor as they need them. Or, if demand warrants, they can buy and carry small stocks of frequently-used items. The off-shore consumers with inadequate commercial channels will still obtain all items from their Navy wholesalers. The latter will requisition these low-demand commercial items from the supply centers at Oakland and Norfolk, who will buy the material as requested. Once again, if demand increases for certain items, the supply centers may buy less often and carry small stocks of more popular items.

To keep group assignments (such as best-seller category) up to date, large consumers will annually report their demand experience to YDSO for items not under central control. With this information, changes may be made in assign-

ments of items to the various categories.

In this manner, we feel that the peacetime system has been devised to accomplish the objective of greatest economy. On the other hand, a complete range of items for mobilization needs is kept in stock and rotated to use to minimize obsolescence. Inventories are extremely high in relation to sales. But, for this segment of the inventory, military readiness and not business economy is the governing objective.

Although part of a military supply system, many of our management principles apply to an industrial supply system. One of these recognizes that as it costs money to maintain inventory, so it also costs money to place orders. This is the "cost-to-hold vs. the cost-to-order" principle in which balance must be maintained. In analyzing long-supply items for which there is a present need, we have established an economic retention level in terms of number of years. Beyond this, the housekeeping and other costs of maintaining the inventory will have amounted to more than the value of the material. Therefore, material in excess of this retention level, if there is no planned mobilization requirement, is offered to other government departments and if not required, is disposed of. Most frequently, the mobilization requirement is less than the economic retention quantity.

Also, ordering costs and inventory costs are considered in establishing frequency of purchase. Normally, we buy four times a year. However, the high volume, low value items are ordered only once or twice annually. By so doing, we not only reduce order costs, but sometimes obtain more preferential prices and freight costs as a result.

Another principle we follow is that of merchandising our material. If some items are over-stocked and others short, we publish possible substitutions of long-supply items and thereby bring supply and demand into balance. This has been used successfully with tires of the same size but of different ply or tread design. We also plan to lower prices of Navy wholesale stocks of commercial items that have been dropped from the

centrally-controlled group. By so doing, we hope to encourage maximum use of these items by consumer activities, before they begin buying them in the commercial market.

Another important management principle concerns our attempt to obtain *concurrent* delivery of parts with new equipment. Although considered vital for a military supply system, this objective is slowly being achieved in the face of great difficulties. Some manufacturers, after receipt of a defense contract for equipment, delay in providing identification and descriptive information on components and parts and their recommendations on parts support. This data is required before Navy allowance lists of parts can be completed. Two other inherent problems exist: lengthy research for cross-reference to other manufacturers' part numbers in order to determine existing inventories of these items and statutory conditions that must be met before short-cut purchase methods can be adopted. Only by continued study and cooperation will these problems be solved.

The present Navy supply system is eight years old. In that time, tested in the crucible of Korean combat, it has demonstrated that it can achieve its primary objective; support of military operations of indeterminate size at any point in a global arena. The need for a continuous national posture of military readiness for an indefinite future period has caused considerable concern over the country's ability to carry this economic burden. As a result, an ever-present supply consideration emerged as an equally important peacetime objective: maximum economy. A self-analysis was conducted of the Navy supply system and a particularly searching study was made of YDSO operations because of commercial availability of our commodity. The conclusions, policies and management principles developed from this study seem to be serving the YDSO objectives of mobilization readiness and peacetime economy. We are not satisfied that all has been done. New principles are postulated, debated and tried.

In developing both new and present management principles, we have drawn freely from other sup-

ply systems, both military and industrial, from the ideas of our wholesalers and consumers, as well as from our own experience. What has emerged for application to our system has been a synthesis of many ideas—from people in all functions and at all levels in the organization. Whatever the merit of our management principles and whatever their success in operation, it has been achieved by many people in the organization with encouragement, guidance and sound judgment from capable and imaginative top management.

Have you renewed
your subscription?

Largest Single Order for Transports by Eastern

Eastern Air Lines placed the largest single transport order in aviation history with Lockheed Aircraft Corporation. The order covers 40 propjet Electras, plus 10 Super Constellations, all worth \$125,000,000.

The Electra, first turbine airliner to go into production in this country, will be 75 m.p.h. faster than today's crack transports. Its top speed is 450 m.p.h., and it cruises at 414 m.p.h. Rickenbacker said Electras will speed up schedules about 20 percent on most of EAL's 90-city system when the new turbo-props start service in 1958.

8 Major Army Exercises Scheduled for Fiscal '56

Washington (AFPS)—The Army has released details of eight major training exercises that will take place during this fiscal year.

The exercises include arctic, amphibious and mountain operations involving thousands of men.

The first in the series, Lode Star—training in mountain and cold weather operations—began recently at Camp Hale, Colo., and will continue through next spring.

An estimated 5,000 men will take part in Lode Star including elements of the 77th Special Forces Gp., and two battalion combat teams.

The largest training maneuver since WWII, Sage Brush, is scheduled to get under way in November in the Camp Polk, La., area. Conducted jointly by the Army and Air Force, it will last through December and involve 140,500 men.

Army units taking part include headquarters of Fourth Army, III and XVIII Corps; 1st and 4th Armored Divisions; 82nd Airborne Div.; 3rd Inf. Div. and 11th Armored Cav. Regt.

Components of two regimental combat teams will be put through their paces in a series of exercises beginning next January.

During January and February about 2,000 troops of the 5th RCT will take part in Moose Horn in Alaska. They will learn how to move a battalion combat team over highways in arctic conditions.

One battalion of the 187th Airborne RCT, now returning to the U. S. from Japan, will be on hand for Arctic Night, scheduled to begin in the Northwest Command during February. The exercise will provide arctic training for other army and AF units.

The Army said that other individuals are now taking part in Arctic Indoctrination, an exercise being held at Big Delta, Alaska. It will end in August, but will be restaged again next January.

High Seas Special will train Sixth Army units in amphibious operations and logistical support. Exact locale and date will be announced later.

Ft. Lee, Va., will be the site of Logex, to be conducted in May 1956. It will train officer students at the technical and administration schools and reserve officers in planning and conducting logistical operations under battlefield conditions.

A PACKAGE of ADVERTISING POWER

GENERATORS of POWER The pages of ARMED FORCES MANAGEMENT

play a dual role.

The editorial content, hand-picked for all echelons of the Defense Establishment, is a collective voice promulgating the tenet of economical POWER, through GOOD MANAGEMENT.

Through contractual and personal subscriptions, ARMED FORCES MANAGEMENT reaches the type of reader to whom YOUR ADVERTISING MESSAGE SHOULD BE ADDRESSED!

To assist you in programming your advertising requirements, are these nationally known Publishers' Representatives:

Whaley Simpson Company
6513 Hollywood Blvd.
Los Angeles 28, Calif.
Hollywood 3-7157

Whaley Simpson Company
55 New Montgomery Street
San Francisco 4, Calif.
Sutter 1-6072

Dwight Early and Sons
100 North LaSalle Street,
Chicago 2,
Illinois, Central 6-2184

Weston and Weston
6 East 39th Street,
New York City,
Murray Hill 5-9450

McGoey Brothers
10 Terauley Street
Toronto 1, Canada
Empire 6-7626

ARMED FORCES MANAGEMENT

Index to Advertisers

- Brown Madeira and Company**.....Page 21
This leading investment firm, specializing in mutual investment funds, offers investment information without obligation.
- Borg Equipment Division—The George W. Borg Corp.**.....Cover 4
Borg offers fractional horsepower, totally enclosed motors with or without internal gear train, New Standard Micropots, and all types of potentiometers.
- Clark Equipment Company**.....Page 1
Makers of a complete line of factory truck equipment advise manufacturers to buy quality parts and service from local Clark dealers.
- Curtiss-Wright Corporation**.....Page 9
Makers of some of the world's finest aircraft engines, this firm hints at some of the power it packed into the Grumman F11F-1 with its Curtiss Rocket power.
- Equipto Division of Aurora Equipment Company**.....Page 33
Manufacturers of factory and shop equipment for the past forty years, Equipto will send their free, illustrated catalogue, covering a wide variety of products, to interested personnel of the Defense Establishment.
- Federal Sign and Signal Corporation**.....Page 45
Is the maker of the Beacon Ray light. Military sub-divisions using it have set new safety records.
- Gar Wood Industries, Inc.**.....Page 37
The world's largest producer of truck equipment makes special equipment problems their specialty, invites your inquiry.
- Graphic Systems**.....Page 23
Men interested in efficient management are invited to write this New York firm for information on its Boardmaster Visual control board to save time and money and prevent errors.
- Grumman Aircraft Engineering Corporation**.....Page 4
Plot the most famous Navy and Marine fighter planes as reported by history, and Grumman aircraft fill the board.
- Lester B. Knight and Associates, Inc.**.....Page 17
Experienced management counsel and specialized services to the Armed Forces Management groups are available from this firm with an outstanding record of achievement in its field.
- Lithium Corporation of America, Inc.**.....Cover 2
Lithium, one of the key chemicals in our nation's defense is used for propellants, high temperature alloys, cermet, and chemical processes to mention just a few.
- Lockheed Aircraft Corporation**.....Page 2
One of the nation's leading aircraft firms announces production started on the new giant of the industrial South, the turbo-prop USAF C-130 Hercules transport.
- Massaglia Hotels**.....Page 42
The world-famous eight-hotel chain of Massaglia, from coast to coast, offers the best in hotel housing, a family plan. Hotels are located in Washington, D.C., California, New Mexico, Colorado, Connecticut, Ohio, and Pennsylvania.
- Railroads of the United States**.....Cover 3
Armed Forces Personnel and impediments are moved safely and economically each day by the Railroads of the United States. Approved travel facilities, together with rate reductions for military travel.

On schedule weather or not !

• No weather worries...no alibis! That's why *train travel* is the best military transportation. You leave on schedule, travel on schedule, arrive on schedule.

Train travel keeps units together, too...

provides real meals and real beds...

rest and relaxation that pay off at the end of the line.

For any troop movement—large or small—

travel by train is your very best buy!



*Special discounts for military travel
...reduced furlough fares. Whether paying cash
or using a Transportation Request
...the best buy is a ticket on the*

RAILROADS
of the United States

DEPENDABLE TRANSPORTATION

BORG SERVES THE UNITED STATES

AIR FORCE—ARMY—NAVY—COAST GUARD—MARINES



OPEN THIS DOOR

...TO BORG RESEARCH, ENGINEERING
DEVELOPMENT, PRODUCTION AND SALES

... TO THE FINEST OF

FUSE TIMING EQUIPMENT

MICROPOTS (PRECISION MULTI-TURN POTENTIOMETERS)

MICRODIALS (PRECISION 10-TURN COUNTING DIALS)

SERVO MOTORS

INSTRUMENT MOTORS (SYNCHRONOUS AND INDUCTION)

BORG EQUIPMENT DIVISION

THE GEORGE W. BORG CORPORATION
JANESVILLE, WISCONSIN

For more facts request No. 32 on reply card

POSTMASTER: If this magazine is addressed to a member of the United States Military or Naval Service, whose address has been changed by official orders, it may be forwarded without additional postage. See Par. j, Sec. 43.12, P. L. & R.

Accepted as controlled circulation publication at Mount Morris, Illinois